A FEASIBILITY STUDY OF A NEW PRIVATE HOSPITAL PROVIDING HIGH QUALITY AND SPECIALIZED SERVICES

by

HO YUEN-CHING, SAMMY
(何遠征)

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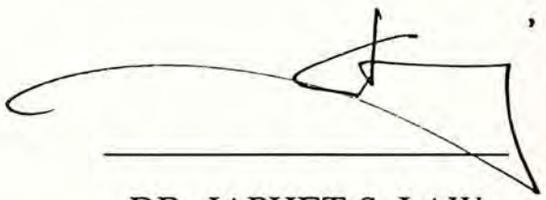

DR. JAPHET S. LAW

Advisor

ABSTRACT

Owing to high economic growth and improving living standard in Hong Kong, there seems to be a demand for higher quality medical services. Some highly specialized services which require high technology and advanced equipment are now being provided by certain hospitals or medical centers scattered around the territory. In fact, the establishment of these facilities at scattered locations may be uneconomical as they are providing similar services and misallocating resources. A new center providing super specialty services of high standard may be established in Hong Kong.

The aim of the study is to examine the feasibility of establishing a private hospital providing high level of health service. Several variables or factors will be carefully studied: strategic objectives, demand estimation, strategic options, hospital structure, human resources, land & building, equipment, and financial feasibility.

Financial feasibility will be evaluated and conclusions will be drawn based upon the analyses. Limitations regarding the research will be stated.

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CHAPTER 1

INTRODUCTION

Owing to high economic growth and improving living standard in Hong Kong, there is a demand for higher quality medical services. At present, about 90% of hospital beds are in government or subvented (i.e. government-assist) hospitals; and 97% of these are of third class, leaving the patients with no choices but accepting third class beds which are over-crowded and of low service quality even though they have the ability to pay more for better services.

Some highly specialized services which require high technology and advanced equipment are now being provided by certain hospitals or medical centers scattered around the territory. In fact, the establishment of these facilities at scattered locations may be uneconomical as they are providing similar services and misallocating resources.

Based upon these observations, a new center providing focused specialty services of high standard may be considered in Hong Kong. Such a hospital may be regarded as a "center of excellence". It would be self-financing with a view to make profit in the long run. It would provide quality specialty services by attracting high caliber and highly qualified medical personnel who are dedicated to

promoting medical services. It will not only serve people of high income who are willing to pay for the quality and personal services, but can also provide service to those people with lower income who could receive financial assistance from government or from some kind of insurance arrangement.

The aim of this research is to study the feasibility of establishing a hospital providing high level of health service. Several variables or factors have to be carefully studied: the demand for such a hospital; the financial feasibility, source of funds and cost analysis; the supply of human resources from doctors to junior staff; the equipment, type and cost.

CHAPTER 2

METHODOLOGY

The research comprised three stages. The first stage was literature review; the second stage was secondary data collection and the third stage was primary data collection through personal interviews.

2.1 First Stage

It began with literature review which included, but not limited to, (1) Australian consulting firm's "A Report For The Hong Kong Government -- The Delivery Of Medical Services In Hospitals", December, 1985; and (2) "The Hong Kong Government, Working Party On Postgraduate Medical Education And Training, Report And Recommendations", October 1988.

2.2 Second Stage

Secondary data from Medical & Health Department and government statistics were first collected. Data collection on the demand of medical services and financial feasibility was first started because it was believed that they were the most important ones. First if there is simply no such a demand or it is financially infeasible, any further study is meaningless.

2.3 Third Stage

At this stage, data collection was through interviews and telephone inquiries to get primary data and some refined secondary data. Annual reports of private hospital with financial information were not available because of its confidentiality. Personal interviews were conducted at this stage, including consultant doctor, oncology specialist, cardiologist, hospital finance Vice-president, and a registered nurse.

CHAPTER 3

AN OVERVIEW OF MEDICAL HEALTH IN HONG KONG

An overview of medical health and a review of medical system in Hong Kong provided the background information for the research.

3.1 Mortality Rate and Life Expectancy

In the past decade, Hong Kong people have enjoyed a good general health care. Mortality rate since the 1970s has been decreasing from 5.04 in 1973 to 4.80 in 1987 (Standardized Death Rate, basing on population figures for England and Wales 1980, was 10.84 and 8.06 respectively). Mortality in Hong Kong is very low already as compared with standardized Death Rate. Life expectancy at birth in 1985 (73.8 years for males and 79.2 for females) is close to the highest ever recorded, in Japan, Sweden and Switzerland -- countries with the lowest mortality. It is likely that the present trends will continue (See table 1).

Table 1[1]

Expectation of Life at Birth

	Country	1986	1996	2006
Male	Hong Kong	74.0	76.1	77.3
	Japan	75.1	76.4	77.2
	USA	72.0	73.9	75.9
Female	Hong Kong	79.8	81.8	82.9
	Japan	80.8	82.3	83.1
	USA	79.3	81.4	83.5

The infant mortality rate dropped from 19.6 per 1,000 lives births in 1970 to 7.5 per 1,000 live births in 1987. These figures compare favourably with some of the most developed countries in the world (See Appendix 1). Infant mortality rate is a sensitive index of the provision of medical and health care as well as the socio-economic condition of the community.

Children have enjoyed a good nutritional status and the once common poliomyelitis, diphtheria and cholera are now virtually eradicated. Furthermore, rabies and malaria have also been held under control. These incidences reflect the high level of general health care is being provided.

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[1] Source: The Hong Kong Government Working Party on Postgraduate Medical Education and Training -- Report and Recommendations, October 1988, p.63

3.2 The Health Policy of the Hong Kong Government

"The basic health policy of the Hong Kong Government in ensuring a balanced development and providing preventive, curative, and rehabilitative services, within the resources available, is in accordance with the concept of primary health care enunciated by WHO and should go a long way towards meeting the health-for-all objective."[2]

The role of government has always been a low-cost medical service provider. Basic health services are for the general public and are easily accessible to all individuals and families in close proximity to their homes. It is estimated that local health care is available to 99% of the population within one hour's walk or travel. In cases of genuine hardship, there is provision for waiving charges.

The high proportion of government funding of recurrent expenditure for Government and subvented hospital[3] and the fact that Government funding of the hospital system requires expenditure equal to approximately half of the money paid as personal income tax by the community means that Hong Kong may be said to have had the elements of community-based health insurance system already, though few would recognize it as such.

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2 Evaluation of the strategy for health for all by the year 2000 -- Seventh report on the world health situation, Vol 7, Western Pacific Region.

3 Government paid HK$20.1 while household paid HK$1 in Government and subvented hospitals in 1984.

The low-cost policy, though achieving easy accessibility of the public, is hindering the process of specialization or research and development in various fields because of the limited revenue generated from these government operations.

3.3 Review of the Current Situation in the Delivery of Medical Services

Over the past ten years, the government has spent an average 8% of the total expenditure on medical and health services (Appendix 2). Even though the population has been increasing significantly, the standards of public health are maintained and health indicators have been satisfactory by world standards. Throughout the decade, the activities followed the plan of the White Paper in 1974 but emphases have been given in regionalization of services and building major new facilities and more clinics. Since then there are now five regional hospitals and two of them have been opened in the period. However this system still has problems. Overcrowding in major hospitals is inevitable and there also exists the imbalance between government and subvented hospitals.

Government regional hospitals show the highest occupancies (average over 92% since 1980 and rising to 100% in 1982) while occupancy rates in the subvented hospital is consistently lower (average around 80% since 1980). This shows the hospital beds cannot be utilized efficiently.

For the long term problems, the government will be required to provide more funding in the future. Resources utilization and allocation as well as general management situation of large hospital need improvement.

3.4 Australian Consultants' Report on the Delivery of Medical Services in Hospitals (December 1985)

The review done by the Australian consulting group had two parts. On the operation level, the focus was placed on the resources utilization while at the management level, it examined the management structure and its control system. The existing structure of Medical and Health Department is presented in appendix 3.

A framework is established aiming at more effective integration of structures at the top and controlled delegation of responsibility to operating units. Three structures are recommended. Public health will be handled by a statutory hospital authority outside the civil service but strongly funded by the government. Secondly, regional management is achieved through new boards of management with independent chairmen. Thirdly, a staff advisory commission is set up to employ all staff on similar compensation basis. (See Appendix 4 & 5)

Furthermore each major hospital is headed by a Chief Executive member of the regional board of management. The Chief Executive is required to have management skills and also expertise appropriated to hospitals. He will also be supported by a Chief Medical Officer, a Chief Nursing Officer and a Chief Hospital Administrator. (See Appendix 6). A typical present major hospital structure is presented in appendix 7 for reference.

This will improve the balance between professional and management accountability of the personnel who assumed defined areas of responsibility. In addition, divisions will be established based on specific clinical areas such as medical, surgery, obstetrics and gynaecology. This framework will increase the ease of peer review and enhances professional career development. Furthermore, each consultant would head a unit consisting of 60-80 patients, supported by one Senior Medical Officer, three Medical Officers and various interns and externs. In this way, the patients can enjoy an overall quality of care as the load of consultants will be decreased while enjoying more attractive career prospects.

3.5 Later Development

The government accepted the recommendations from the consulting report. A Provisional Hospital Authority was set up in 1989 to implement the recommendations.

According to the Secretary for Health and Welfare, Mrs Elizabeth Wong Chien Chi-lien, there are three main functions of Hospital Authority:[4]

(1) To integrate government and subvented hospitals into one structure so that resources can be equitably allocated;

(2) To bring in effective management policies, in this respect government will use more resources;

(3) To promote public participation in hospital system, ensuring that the hospitals can provide the medical services needed by the public.

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[4] Oriental Daily Press, March 23, 1990.

CHAPTER 4

DEMAND FOR A NEW PRIVATE HOSPITAL

It is necessary first to identify whether there is such a need for new private hospital and then to develop a framework for such a new hospital. For demand estimation, following factors have to be considered: population trend, economic growth, existing demand for medical health services, supply of hospital beds, trend of diseases, existing health care facilities, and other countries' experience.

4.1 Population Trend

The population of Hong Kong was 5.6 million in 1987 (Appendix 8) and in 2006 a 6.5 million population is projected, representing an overall increase by 16%. Hong Kong will have a lower growth rate around 2% resulting in 16% fewer children, 21% more working population but a big 91% increase in the elderly (age equal or greater than 65) in 2006. The median age will increase from 30 in 1986 to 35 in 1996 and to 40 in 2006. Therefore an older population is expected in Hong Kong in the future (Appendix 9 & 10).

This implies that the demand for medical services will increase owing to the rising proportion of elder population. A shift in demand in various medical services will result as life expectancy also lengthens (see table 1 and the

following table 2).

Table 2

Median age and life expectation in Hong Kong[5]

Year	Median Age	Life Expectation	
		Male	Female
1986	30	74.0	79.8
2006	40	77.3	82.9

This increase in population age indicates there is a growing demand for medical health care as older population is more susceptible to diseases.

4.2 Economic Growth

The economic growth of Hong Kong in the 70s and 80s was substantial. The real Gross Domestic Product (GDP) was HK$246 billion in 1988 or HK$43,286 in per capita term. The real GDP growth rate during 1970-1989 was 7.4% and 5.7% in terms of per capita GDP (see table 3), meaning that Hong Kong people are getting richer. Hong Kong people are ranked third in Asia in terms of per capita GDP, just behind Japan and Singapore (see table 4)

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5 Source: Government statistics

Table 3

Average Real GDP Growth Rate[6]

	10 years 1979-89	5 years 1984-89
GDP Per Capita	5.7	5.6
GDP	7.4	7.0

Table 4

GDP Figures (1988) for Asian Countries[7]

(in U.S. Dollars)

Country	Real GDP (billion)	Per capita ($)	Real GDP Growth Rate in 1988 (%)	Real GDP Growth Rate 5-year average (%)
Japan	2,805.5	22,772	5.6	4.5
Singapore	23.8	8,817	11.0	5.6
Hong Kong	45.7	8,158	7.3	8.4
Taiwan (Real GNP)	95.8	4,837	7.3	9.3
S.Korea	154.6	3,436	11.3	11.4
Malaysia	34.1	2,018	8.1	4.2
Thailand	51.1	930	10.8	7.2
Philippines	32.6	527	6.8	0.5
China (Real GNP)	269.4	245	10.2	11.2

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6 Source: Government Statistics

7 Source: Fortune, Special Issue, Autumn 1989, No. 26

Substantial improvements in living standard, infrastructure and communication facilities were witnessed in Hong Kong but these cannot be measured objectively. With rising income, people are willing and has the ability to pay more for better medical services.

From the analysis, it can be seen that there is a correlation between the real GDP growth and the percentage of patients treated in private hospitals. During the slow economic growth period of 1981-85, the percentage of neoplasms and heart diseases patients treated in private hospitals in 1982-86 have also dropped. When the economy picked up in 1986, the percentage of those patients treated in 1987 also increased. There was about a one-year time lag between decrease (increase) in economic growth and a corresponding decrease (increase) in percentage of patients treated in private hospital (compare appendix 11 and 13).

4.3 Need for Improvement for Medical Health Services

In addition to general increase in population and expected increase in "population age", the delivery of medical services in government and subvented hospitals and clinics needs improvement and development.

The occupancy rate in government hospital is around 92% while that of subvented hospital is 80% indicating overcrowding condition in hospitals. The over-crowdiness of

patients will decrease the quality of medical service and worsen the working condition in these hospitals leading to the leaving of doctors to private practice and nurses to private hospital or private clinic. This further aggravates the problem of doctor and nurse shortage in public and subvented hospitals.

It is not uncommon for a patient to wait for a month to have his first consultation by a specialist, and another 3 months for follow-up treatments. To society, this wastes the labor hour; to the patients, this prolongs their suffering.

4.4 Supply of Private Hospital Beds

The need for a new hospital depends on the availability of hospital beds in both the private and public sectors.

4.4.1 Government & Subvented Beds Vs. Private Beds

During the 10 years' period form 1978 to 1987, there was a 35% overall increase of government hospital beds from 9,380 to 12,631; a 14% overall increase of subvented hospital beds from 8,347 to 9540; while for the private hospitals, there was a 13% overall increase from 2,408 to 2,725 beds. The overall increase in population during the same period was 17%.

When studying the number of people per bed for the same period (appendix 14 and 15), it can be seen that the

number of people per total bed (Government + Subvented + Private) has been dropping while number of people per private bed has been increasing since 1982 (appendix 15), indicating government has played a more active role in supplying hospital beds.

The increasing number of people per private bed, coupled with increasing per capita income, presents a greater demand for private hospital beds.

4.4.2 No New Private Hospital Since 1971

As of April 1990, there are 11 private hospitals and 2 Nursing and Maternity Homes in the private sector. In the public sector, there are 15 government hospitals and 20 government-assisted hospitals.

It is found that there has been no new private hospital since 1971. The "newest" hospital is the Hong Kong Adventist Hospital established in May 1971 with 150 beds. The next "newest" hospital is The Hong Kong Central Hospital Limited established on November 12, 1966 with 128 beds.

Surprisingly, there are only 2 real private hospitals, i.e. hospital with no religious background or support. They are (1) The Hong Kong Central Hospital Limited, which is a self-supporting, non-profit making hospital

with 128 beds, and (2) Hong Kong Sanatorium & Hospital Ltd, which is administrated by the Li Shu Fan Medical Foundation Ltd. with 500 beds.

From casual observation, there has been no closing down of any private hospitals so far, indicating that private hospitals are viable, both financially and operationally.

4.5 Trend of Diseases

The five leading causes of death in Hong Kong have been, in order of decreasing numbers:

(1) Neoplasms (i.e. cancer, or tumor, see appendix 16 for explanation of cancer);
(2) Heart diseases;
(3) Cerebro-vascular;
(4) Pneumonia, all forms; and
(5) Injury and poisoning, i.e. accidents.

In 1987, neoplasms accounted for 31% (21% in 73) of all causes of death and heart diseases accounted for 17% (15% in 73), together they accounted for 48% (36% in 73) of all causes of death (see appendix 17). The figures were staggering. (see table 5)

Table 5

% Share of Death (All Causes)

	1973	1980	1987
Neoplasms	21.3	24.7	30.6
Heart diseases	14.6	15.3	16.7
Cerebro-vascular	9.3	13.2	11.6
Pneumonia	10.5	8.8	6.2
Injury and poisoning	5.8	8.0	5.9

During the period of 1973 to 1987, there was 82% increase in the deaths from neoplasms and 45% increase for heart diseases.

Looking at the 1956 and 1986 percentage shares of cause of death, one can see a substantial rise of death from neoplasm and heart diseases across all ages (see appendix 18).

From the study, it is found that neoplasms can occur at all ages, while the 35-60 age group accounted for greater share. This group of patient still has the earning power and is believed to have the ability to pay high medical expenses.

In 1956 and even more in 1986 the most common cause of death in children and young adults was "injury and poisoning", especially accidents, now accounting for 65% of all deaths at about the age of 25 years in men and 55% in women. Neoplasms are a major cause, proportionately, of death in

children as well as at all ages after birth.

In 1956 a main cause of death at all ages was "infectious and digestive diseases". In 1986 this decreased dramatically and there was a considerable increase in deaths from neoplasms.

"It seems likely that deaths from cancer (neoplasms) and from heart disease will continue to increase unless there is a dramatic change in the causation, a reduction in smoking, or a substantial improvement in treatment, which may also be possible."[8]

There is rise and fall of heart diseases cases as revealed in appendix 19. Probably, people are paying more attention to this acute disease and also more resources and facilities are used to tackle the heart diseases. (see also 4.4.4)

In fact the demand for curing these killers lies not only in the number of death, but also in the number of patients who are in treating processes. In 1986, there were 59,647 in-patients for neoplasms resulting in 8,054 death (about 14%). For heart diseases, there were 35,052 in-patients resulting in 4,337 death (about 12%).

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8 The Hong Kong Government, Working Party On Postgraduate Medical Education And Training -- Report And Recommendations, October, 1988.

Since cancer and heart diseases are also the 2 top killers in other countries, its acute and fatal nature has psychological effects on people. People tend to be more alert to the disease. They pay more attention and are eager to consult doctor when any symptoms of the diseases, especially that of heart diseases, are observed. Also they are willing to pay higher consultation fee. This should create demand for early diagnosis and regular check-up.

In summary, there are growing trends for cancer and heart diseases. So the new hospital may choose one or both areas as its main focus of providing specialty services.

4.6 No Integrated Cancer Treatment Center Existing

Because of the rapid rising number of cancer diseases, the need for providing cancer treatment service in hospitals is imminent. To understand the provision of such service, we have to know how cancer is treated and what is the current situation in Hong Kong.

4.6.1 Treatment of Cancer

The treatment of cancer can be of three streams:

(1) Surgery -- to remove the neoplasms or tumor directly

(2) Radiotherapy (Radiation Therapy) -- use radiological technique to kill the germs

(3) Chemotherapy -- by chemicals or drugs.

It should be noted that about half of cancer cases need surgery as the main treatment and some will be diagnosed by medical specialists.

4.6.2 Current Situation

It is believed that the best way to diagnose and treatment of cancer is to centralize or integrate these three streams together so as to provide an integrated package of treatment. At present, there is no integrated cancer-diagnosis and treatment center.

In Hong Kong, the medical equipment for diagnosis and treatment of cancer is rather advanced and adequate. It is the coordination of human resources being the matter of concern. Traditionally, the three streams are separate. A patient would receive only one kind of treatment at a time. It should be better to set up a center to coordinate the three professional expertise in order to give the best treatment process for the patients, for example, it can form a panel of doctors from the three streams and manage a case jointly.

At present, there is a shortage of experts on chemotherapy or oncologist in Hong Kong, including nurses specialized in this field. The main reason is that there is not enough training provided in Hong Kong. Because doctor needs to know the detail of the

case and to communicate with the patients, recruiting overseas experts will not help ease the problem because of language barrier.

Radiotherapy service is provided in four government hospitals, namely Queen Mary, Queen Elizabeth, Prince Wales and the newly built Tuen Mun Hospital. Two private hospitals, Baptist Hospital and Hong Kong Sanatorium, are also providing such service. However, the fee is much higher in private hospitals costing about HK$300 per visit versus HK$24 in government hospitals.

4.6.3 Provision of Specialty Services

There is a limited number of private and public hospitals in providing specialized health services in cancer and heart diseases in Hong Kong (see table 6). The provision of specialty services for heart diseases is considered to be more adequate in both public and private sectors. For the public sector, there is The Grantham Hospital which takes up much of the operations for heart diseases. For the private sector, there is the Heart Center at Hong Kong Adventist Hospital and the Open Heart Surgery at Hong Kong Sanatorium.

Table 6

Provision of Specialty Services

Cancer and Heart Diseases

Cancer		Heart Diseases	
Public	Private	Public	Private
Nam Long (Hospic)	Sanatorium	Grantham	HK Adventist's Heart Center
Prince of Wales	HK Baptist	Prince of Wales	Sanatorium
Queen Elizabeth		Queen Elizabeth	
Queen Mary		Queen Mary	
Tuen Mun		Tuen Mun	

In view of the present situation with apparent rising trend of cancer, there is a greater demand for an integrated cancer center than a specialized heart center. Provision of cancer-treatment services in private hospital is limited (mainly surgery) and is not integrated. Limited recovery wards and no hospic care are provided by the private sector.

Ideally, the new cancer center should include recovery ward and provide hospic care. The hospic care is to be of significant value in the social and emotional aspects of the dying and their families and therefore should be encouraged to grow and become more available to those in need.

4.7 Trend Of Privatization Of Hospital in Asia

In Hong Kong, the expenditure on medical health care is increasing every year. The cost recovery from operations is low and the government subsidizes 77% of the cost. The cost burden is getting heavier. The share of medical and health expenditure in the total government expenditure is increasing, from 8.78% in 1983/84 to 11.48% in 1987/88 (see appendix 2).

From a report in Asian Business[9], there is a trend of private sector taking up a more active and important role in providing health services. The idea of privatization of hospital is aimed at cost-effectiveness in countries like Singapore and Malaysia as the health costs are becoming an increasingly greater burden for these governments (See table 7 on page 27).

In Singapore, it is experimenting with a government owned-privately run hospital concept. In 1985, it opened a private hospital, the National University Hospital which is publicly owned but is run by a limited liability company. It has aimed at becoming "the hospital of choice" to compete with the best public and private hospitals in Singapore.

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9 Asian Business, May 1987, pp. 16-25

At the same time, Malaysia is also trying to privatize its health services in order to release the heavy cost burden from the government. It is looking at the idea of private doctors operating out of government hospitals.

In Indonesia, there is even a rash of private hospitals as the government is unable to provide good public health services. Pondok Indah Hospital, opened in December, 1986, is privately run and owned in view of an acute demand of general hospital. The capital cost was US$10 million with 97 beds.

The increasing cost of health care for these Asian governments makes them look more to the private sector to provide medical services. Investors realize that investing in hospital may be as profitable as other business. In addition, the government may help these investors in one way or another. In Hong Kong, the government is following the trend. It privatises the government and subvented hospitals by setting up Hospital Authority which is outside civil service structure.

Table 7

Government Subsidies and Expenditure on Health Care[10]

Gov't Subsidies		Expenditure on Health Care (% of GNP)	
Hong Kong	77%	Hong Kong	11%
Singapore	73%	Singapore	2-3%
Malaysia	60%	U.S.	> 10%
Indonesia	40%	U.K.	6-7%

4.8 Conclusions

From the above analyses, there is a need to establish a new private hospital. Particularly, it should provide integrated cancer treatment services because cancer is number one killer and the trend for cancer diseases is rising.

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CHAPTER 5

MISSION, STRATEGIC OBJECTIVES, AND STRATEGIC OPTIONS

After identifying the need for a new private hospital, a framework for the hospital is to be established. At a strategic level, mission and objectives have to be stated. It is necessary to decide what kind of services the proposed hospital will provide, whether it would be a general hospital or a specialty hospital. Then organizational structure has to be designed (Chapter 6). Location (Chapter 7) and resources requirements including human resources, land, building, and equipment (Chapter 8) have to be considered. Finally, financial feasibility (Chapter 9) is evaluated.

5.1 Mission of the Proposed Hospital

Mission Statement:

The new hospital is to be the leader in providing and promoting high quality medical and health services to the community.

5.2 Strategic Objectives

Several strategic objectives of the proposed hospital can be identified:

(1) To improve return on assets to achieve self-financing state;

(2) To provide high level medical treatment with advanced technology and superior value for money;

(3) To increase productivity and efficiency;

(4) To improve management and medical staff relations;

(5) To attract a large pool of dedicated doctor and staff.

5.3 Strategic Options

Having studied the demand for high quality specialty medical services and identified two top killing diseases, strategic options for the proposed hospital can be put forward. There are 4 strategic options:

The hospital will be a

(1) Cancer center;

(2) Heart center;

(3) Cancer and heart center; or

(4) General hospital.

5.4 Analyses Of Strategic Options

(1) Cancer Center

Advantages:

- There is a trend of increasing demand. The percentage share of cause of death and the absolute number of cases is going to augment.
- Cancer is a fatal disease and can spread to other parts of the body. People will be alert and eager to get rid of it. So they are willing to pay high fee for the treatment.
- It is a age-wide disease. Young and middle-aged are willing to pay because they can retain their earning power after recovery.
- There is no integrated center coordinating the 3 methods of treatment and providing follow-up recovery facilities.

Problems:

- Set up cost, including perhaps specially designed treatment room, is formidable.
- Cost of equipment and recurring costs are high.
- Usage of equipment is too specialized e.g. CT Scanner, its cost cannot be shared by general patients. (One way to tackle this problem is to increase the usage of the machine, say, by arranging annual check-up for business executives. (See 3.7.4 Marketing & Public Relation)

(2) Heart Center

Advantages:

- There is an increasing trend, in absolute terms, for heart diseases.
- Heart diseases are the number two killer after cancer.
- It is a fatal and acute disease. People will be psychologically more alert. So they are willing to pay high fee for the treatment.
- It occurs at all ages, especially at older age. This presents an opportunity because the population of Hong Kong is getting older.

Problems:

- In absolute terms, heart diseases are 45% behind number one killer - cancer. (8,258 vs. 4,515 in 1987)
- There are already plenty of well-established competitors.
- Competes for human resources with competitors in private and public hospitals. It can be difficult to recruit suitable personnel.
- The equipment is very specialized. Cost of equipment cannot be shared by other patients.

(3) Cancer & Heart Center

Advantages:

- It takes the opportunity to serve both kinds of patients.
- It has the advantages of both cancer, and heart center as mentioned above.

Problems:

- The equipment and facility are incompatible. It needs to buy basically two sets of equipment and tools.
- The skill, and therefore the profession, involved are totally different.
- The set up cost will be double and presents greater financial problem.

(4) General Hospital

Advantages:

- There is a lack of high quality, professional general hospital in Hong Kong. Market niche does exist.
- It can provide an integrated services.
- Use of equipment can also be shared.
- The fixed costs can be spread among more patients.
- More profit centers can be identified.

Problems:

- Highest set up cost than other alternatives.
- Greater human resources problems.
- Lose specialty focus.

5.5 Selection Criteria

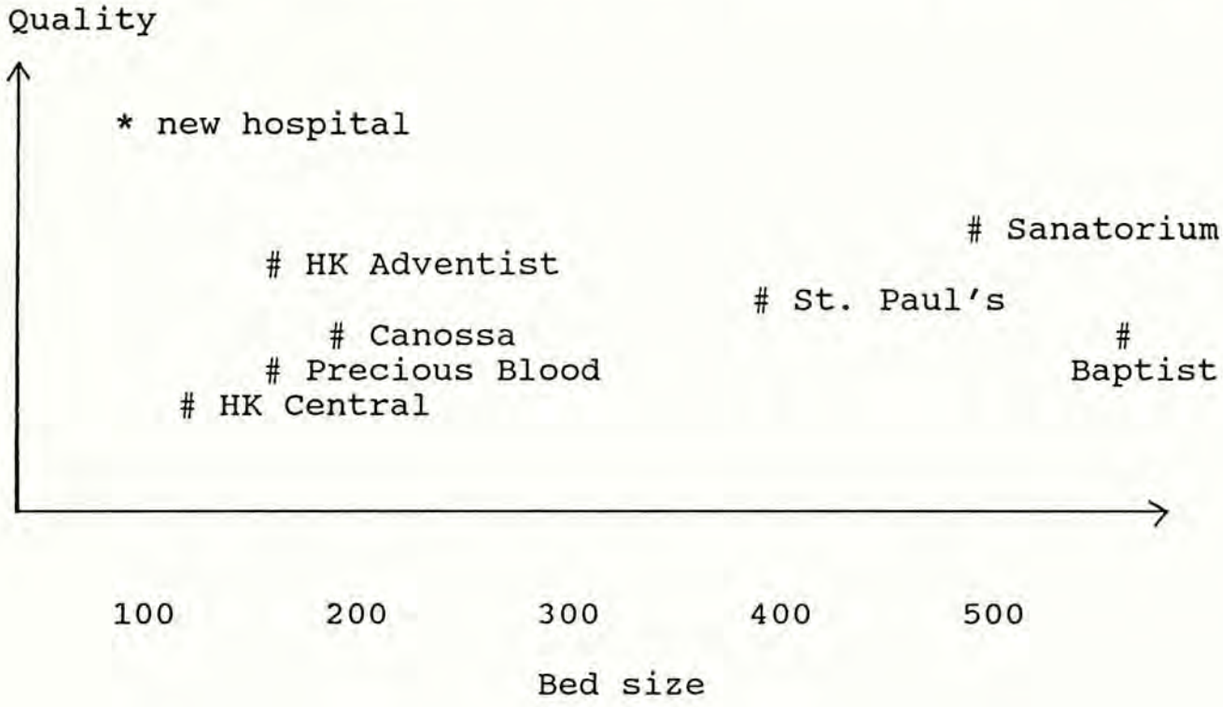
The criteria for selecting the strategic options are firstly, to ensure self-financing and long-term profitability; and secondly to promote the general health of the community as stated in the mission statement.

5.6 Selection

Based on the above criteria, the best option would be a general hospital with emphasis on cancer treatment. At the initial stage, it will operate on smaller scale with 100 beds and later, according to financial results, will expand to 200 beds. From interviews with experts in the field, the best size for such new hospital would be 100 beds. It is also easier to manage.

5.7 Positioning

The hospital will position itself in high quality service of small hospital as shown in the following position map.



As of April 1990, there are 11 private hospitals and 2 Nursing and Maternity Homes in the private sector. In the public sector, there are 15 government hospitals and 20 government-assisted hospitals.

5.8 Competitive Advantage

The proposed hospital should have the best equipment and the best doctors. It will provide high quality personal service to each patient by having high nurse-to-bed ratio. Cancer Medical Board will be set up to make joint and informed decision for cancer treatment. It has proactive marketing & public relation team. Advanced computer system will be used to organize patient records, monitor deployment of human resources, and generate management reports.

CHAPTER 6

ORGANIZATION OF THE PROPOSED HOSPITAL

The organization of the proposed hospital is based on the strategy it follows: to provide high quality medical service with speciality in cancer treatment. The design of the organization is such that it will make the best use of its competitive advantages and will provide the services in a professional and efficient manner.

6.1 Hospital Structure

Before devising an organizational structure, it is necessary to know the functions required in a hospital. An organization chart will be drawn up and special functions of certain department will be discussed including Marketing, and Management Information System (M.I.S.) Department. The M.I.S. Department centralizes patients' records, establishes on-line billing system and generates report for management uses.

Perhaps one can compare the business of a hospital to that of a hotel. One of the main sources of revenue comes from "accommodation". The medical services provided by contracted doctors is similar to the food provided by hotel restaurants.

6.2 Functions Required in Hospital

Three basic types of functions are required:

(1) Inputs from profession groups:

These include (a) medical services by doctors, specialists, (b) nursing services provided by nurses, and (c) hospital administration, ensuring the hospital are running effectively and efficiently.

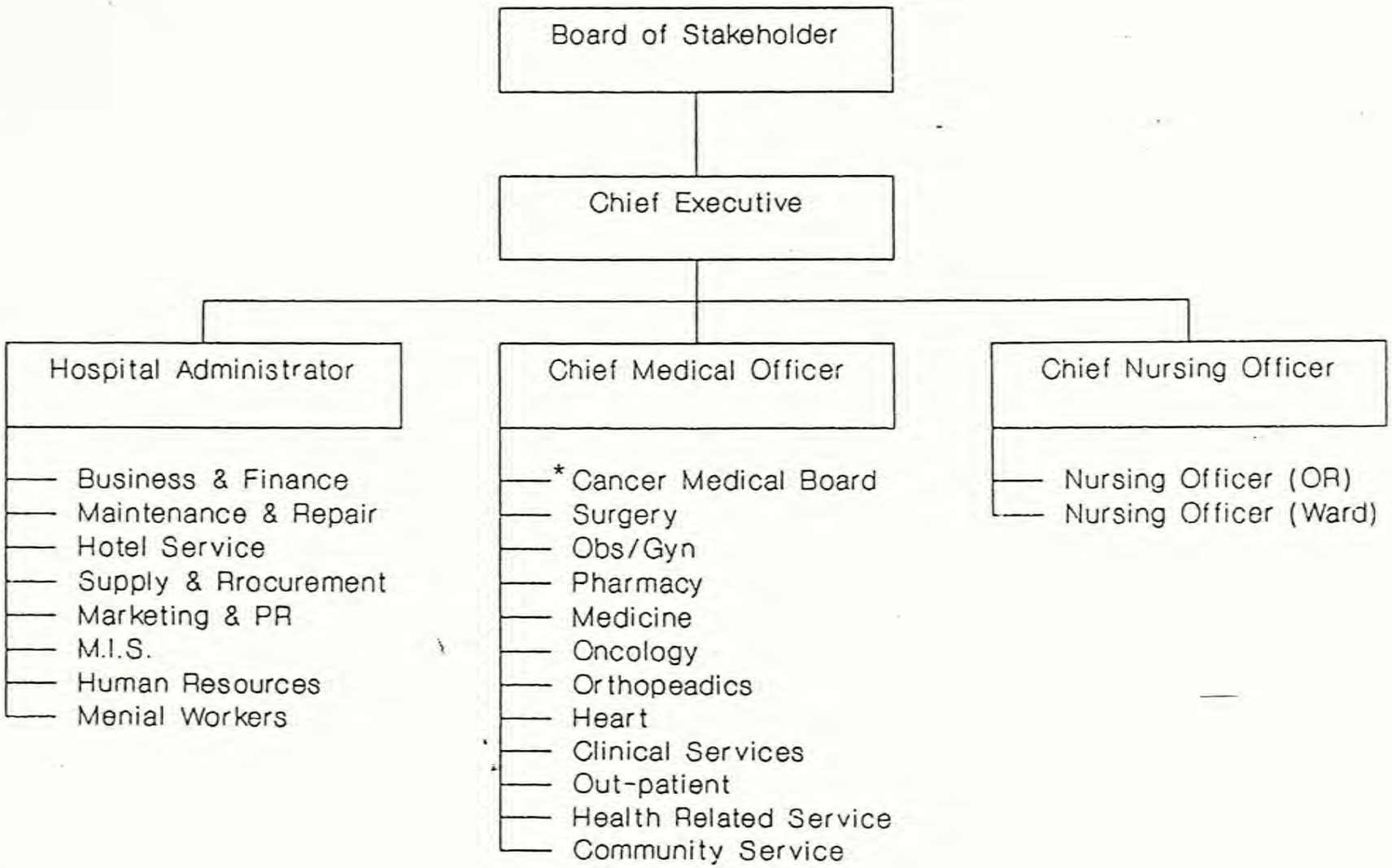
(2) Management of patient care unit:

This includes, but not limited to, patient wards, operating theater, X-ray, clinical and laboratory services etc.

(3) Direction and top management:

This is at a more strategic level to support professional accountability and other hospital objectives. Top management are also responsible for the overall utilization of resources and financial performance.

Organization Chart



No. of Staff : 50 personnel — 6 Doctors, 13 Paramedics — 100 Nurses

Total Staff : 170

* Consultation Function

6.4 Organizational Structure

The structure is identical to that of major hospital proposed by Provision Hospital Authority. The Chief Executive will be responsible for strategic decision and top management direction, including recruitment of key executives and doctors. There are 3 executives reporting to him:

(1) Hospital Administrator

(2) Chief Medical Officer

(3) Chief Nursing Officer

Each executive is responsible for each type of function as mentioned in 6.2. The Chief Executive is the manager coordinating the activities of the three executives. Each executive can exert his strengths and talents. This flat structure enhances communication among executives and allows delegation of power. This structure is simple and yet effective.

6.5 Responsibility of Key Executives

(1) Hospital Administrator : Responsible for staff functional areas such as Business & Finance, Maintenance & Repairs, "Hotel" services, Management Information System (MIS), and Supplies.

(2) Chief Medical Officer : Responsible for medical diagnosis, treatment, and recovery of patients. He is also responsible for coordinating and in collaboration with contracted doctors.

(3) Chief Nursing Officer : Responsible for nursing activities including those at wards and at operating theaters.

The Nursing Officer and Nurses report to the Chief Nursing Officer only. This avoids the problem of "dual" reporting, which may hamper their professional freedom, as opposed to the proposal by Provisional Hospital Authority report. This will also enhance the line of authority and avoid communication problem when one nurse has to report to 2 superiors.

6.6 Contracted Doctors System

From the costs analysis at government and subvented hospitals, doctors and nurses account for about 60% of the recurring expenditure. The ratio of salary expenditure of nurse to doctor is about 2:1. This usually puts great burden on the financing of hospitals. It is necessary to minimize these salary costs. It is financially impossible for the proposed hospital to hire all full-time doctors to treat the patents as it is the case in public hospitals. Contracted or associate doctor system is to be used. Under the system, contracted doctor can use the equipment and facilities provided by the hospital by paying a certain usage fee to the hospital.

6.7 Cancer Medical Board

To tackle the problem of disconcerted activities in treatment of cancer found in government hospital, a Cancer Medical Board is to be set up to serve as consultation function. The board consists of (1) a Chief Medical Officer (CMO), (2) a surgery consultant, and (3) a chemotherapy & radiotherapy consultant. Please refer to organization chart of the Board next page. These two consultants are hired on part-time basis and paid fixed monthly salary.

The Board's three members will meet regularly, or on ad hoc basis, to discuss the diagnosis of and treatment for a cancer patient. Note that the three members of the board, except the Chief Medical Officer, are not fixed. When a contracted surgery doctor brings in a patient, he and the CT & RT consultant, together with the CMO, will form the board. And when CT & RT contracted doctor brings in a patient, he and the surgery consultant, together with the CMO, will form the board to discuss the case.

This fluid structure will benefit the patient as the three experts get together to decide a case. In addition, the doctor who "finds" the patients also participate in the decision-making process.

An Organizational Chart for Cancer Medical Board is presented here.

6.8 Cost and Profit Centers

Departments that mainly provide staff function will be of cost centers basis, e.g. Business & Finance Department. Attention will be paid to cost-effectiveness. While for some departments, e.g., Medical, Surgery Department, will be established on profit center basis. Their performance will be evaluated according to their profit margin contributed to the hospital.

6.9 Functional Departments

The functional departments as appeared in the organizational chart on page 37 are self-explanatory. However the functions of the following departments need elaboration.

Hotel Service

It includes linen, laundry, kitchen, portering and transport, cleaning etc.

Marketing & Public Relation Department

Marketing function though important is often overlooked by most private hospitals. Initially, two salesmen are responsible for soliciting with business executives or big business firms' employees to have body check (particularly for cancer) annually. This will not only serve as an revenue source, but also promote the awareness of the public toward the hospital. Of course, such solicitation must comply with the advertising regulations of the medical profession. Discovery of cancer from these check-ups brings in more

business to the hospital. Thus the hospital can provide an integrated service and promote the general health of community as stated in the mission statement.

In promoting general public health, free seminar or talk will be held for patients or outsiders on various health topics so as to educate the public : prevention is better than cure. Thus, it can promote the image of the hospital as a leader in promoting health and fulfil the mission. Public Relation staff will proactively ask after the patients' health after they have discharged from the hospital.

Management Information System

In public hospitals, very often it is difficult for doctors to find a complete record of a patient, particularly when a patient is transferred from another hospital. There is no central filing and it takes time to find a patient's file, and the allocation and availability of empty beds. This is due to a lack of computer systems to integrate the information. For the proposed hospital, MIS department will centralize the patients' history or record, availability of empty bed, and billing. Moreover, it will generate financial reports for management to control the costs and to tackle the problem areas.

For medical activities, it is not recommended to have Accident & Emergency (A & E) Department because it is costly to operate. It needs to have at least 2 doctors and a couple of nurses on duty around the clock. The A & E Department is unable to operate at Tuen Mun Hospital because of labor shortage problem.

Community Service Department

It will collaborate with Marketing & PR Department to conduct seminars or talks. Also, the department will conduct entertaining activities or religious services to patients making them feel cosy (just like staying in a hotel).

Final Note

Nurses and menial workers are the contact points between the hospital and customers (the patients). Good relationship between the two are vital to the running of the organization. Special training session on building these relationships should be conducted for any new nurses and menial workers before they actually work in the wards. For example, they can learn how to handle impatient patients and complaints, and how to say or do something to comfort a discomfort patient. This session can show the employees of the hospital's commitment in providing close personal service and hospital's expectation of staff performance.

CHAPTER 7

LOCATION OF THE PROPOSED HOSPITAL

7.1 Location

The location of the hospital must be convenient to the public and doctors and away from competitors -- other private general hospitals.

7.2 Convenience is the key

In fact, convenience is more important. By convenience, it means that it is convenient to contracted doctors. It is easily accessible by private cars or by public transport means. From the hospital's point of view, the contracted doctors are the salesmen. It is they who recommend which private hospital the patient should go to. If the hospital is not easy to access, contracted doctors will simply go to other private hospitals even though they know the equipment is better in the new hospital. If it takes too much time to travel to the new hospital, they will lose the opportunity to see more patients which would mean lower income.

Inconvenient location also makes it difficult for the patient's family members and friends to visit him or her. The patient or patient's family members would trade quality for convenience. They would consider both time and cost of traveling to and from the hospital.

7.3 Ideal Location

As a result, Outlying Islands are out of the question. The New Territories, including satellite towns like Shatin, are not ideal locations.

From the study of present location of all private hospitals, it can be founded that there is no private hospital in East Kowloon. Kwun Tong is a good choice because it is near New Eastern Harbor Tunnel and Airport Tunnel, and it is the starting point of East Kowloon Corridor. There is more available land in north Kwun Tong although it is hilly. East Kwun Tong are developing rapidly and extending to Lam Tin and Junk Bay. Kwun Tong can, though less important, also be accessible by ferry.

Another good location is in Wong Tai Sin-Diamond Hill area as there are still some available land. To Kwa Wan and Hung Hom, although a good location, have very limited available land.

The new hospital can be suitably located anywhere on the Hong Kong Island, except the Tai Tam-Shek O-Stanley area. There is more land that can be used along the hill-side near Quarry Bay-Shau Ki Wan area.

CHAPTER 8

RESOURCES REQUIREMENTS FOR THE PROPOSED HOSPITAL

Resources requirements include human resources, land, building, and equipment. Financial resources and financial feasibility of the proposed hospital will be considered in chapter 9.

8.1 Human Resources

Chief Executive is the general manager of the hospital, where experience and training in general management is the prime requirement for this position. Ideally, he should be medically qualified.

There should not be any anticipated problem in recruiting the four key executives (Chief Executive, Hospital Administrator, Chief Medical Officer, and Chief Nursing Officer). For functional staff, market rate will be paid along with a bonus/incentive scheme to enhance the hospital function as a performance-oriented organization. Although there is labor shortage problem, as the hospital pays market rate and has good working conditions, there would be little problem in recruiting suitable staff.

Altogether, the hospital needs to hire 100 nurses, making the bed-to-nurse ratio to be 1:1 which is higher than that of all public hospitals (1:0.4), thus giving high personal

care to patients to show its commitment to providing quality service.

As regards hiring 6 full-time doctors, it would hire the best-qualified with good experience in their fields. They are responsible for taking care of patients when their contracted doctors are not in the hospital. With higher than government pay and better working conditions, the new hospital can attract competent doctors.

Government is likely to accept the recommendation made by Australian consulting firm to grant limited rights of private practice for specialist doctors of government and subvented hospital. The new hospital may hire these experts as consultants in the Cancer Medical Board. The statistics show that there are only 6 private radiotherapy & oncology experts. It may be difficult to persuade them to join the new hospital as consultants. In 1988, the number of senior specialists are as follows:

Specialty	Senior Public	Private	Total
Radiology -			
Diagnostic	26	10	36
Radiotherapy & Oncology	13	6	19
Surgery -			
General	88	174	262

8.2 Land

It is impossible to obtain through land auction or to purchase one from developer because of high cost. In addition, available urban land is limited and its usage has been planned. There comes two alternatives:

(1) Apply for the granting of a piece of land from the government,

(2) Acquire an existing old hospital to obtain its land.

8.2.1 Alternative 1 -- applying for the granting of a piece of land from the government

This alternative presents some problems. Land available in urban area for building hospital is rare. In January, 1990, Hospital Services Department turned down the proposal of building a new hospital in Diamond Hill although a piece of land has been reserved for such use. It is unlikely that the government will grant this piece of land for a high-specialty hospital in the light of the proposed hospital is going to be a profit-making institution.

Another problem is that it is difficult to change the use of land even though a piece of cheap land can be obtained from land developer or other non-profit making organization. Changing the use of land requires the government to change the blueprint of the city development.

Another line to consider is the existing military camps. As 1997 approaches, the use of these land will change. It is now an opportunity to apply for granting of a piece of land for erecting new hospital. This certainly takes time and lot of negotiations to convince the government.

Alternatively, and still better, the proposed hospital can take the place of British Military Hospital at Wylie Road, King's Park, Kowloon when British military personnel leave Hong Kong before 1997. Right now the hospital is financed by Ministry Of Defence, British Government and is administrated by Royal Army Medical Corps.

A follow-up study should be conducted to find out which pieces of land have been reserved for the use of new hospital in the territory.

8.2.2 Alternative 2 -- Acquiring an existing old hospital to obtain its land.

This may be a feasible, quick way to obtain a piece of land which is for hospital use in urban area. Acquiring existing hospital enables the new hospital to start operation at a fairly short time. In addition, it can get the client base and doctor base. Some equipment and tools are readily made available. This can save time and effort to start from scratch.

There are two constraints. The candidate must be private and it must not have religious background or support. As mentioned in 3.5.4 there are only 2 real private hospitals: (1) The Hong Kong Central Hospital Limited and (2) Hong Kong Sanatorium & Hospital Ltd. The latter is much larger (500 beds) than the proposed hospital and it is financially strong. As a result, The Hong Kong Central Hospital is the prime target.

As financial data of The Hong Kong Central Hospital could not be obtained, the purchase price cannot be computed. A study of the purchase price should be conducted.

8.3 Building

From analyses of balance sheets of several subvented hospitals, it is estimated that the ratio between cost of building to cost of equipment is 3 to 1.

For example, the buildings for the Grantham Hospital's balance sheet as at March 31,1989 were HK$5.19 million while the Grantham Hospital Extension Fund's balance sheet for building was HK$36.73 million, which reflects better the current replacement cost of building.

8.4 Equipment

It is impractical to have a fine breakdown of equipment when one estimates the costs of equipment. Very often the equipment is custom-made and sometimes hospital's consulting room may have to remodel to fit the equipment.

Some equipment is very expensive, for example a CT Scanner may cost HK$1.9 million as purchased by St. Paul's Hospital last year. There are, nevertheless, several alternatives to obtain pieces of costly equipment.

(1) Leasing

This is to rent the equipment by paying monthly or annual rental fee to manufacturer. The manufacturer has the ownership of the equipment. As such, there is no need to put enormous initial capital outlay. However, cash flow has to be carefully monitored.

(2) Lease and Buy Back

This is similar to leasing but it is the finance company who owns the equipment, instead of the manufacturer. The hospital makes an arrangement with a finance company to buy a piece of equipment and then leases it back to the hospital which will pay the monthly or annual rental fee.

(3) Bank Loan

The hospital, based upon its credit-worthiness, can obtain bank loan to buy a piece of equipment. The equipment is served as collateral for the bank and the ownership of the equipment vests in the bank.

(4) Joint Venture

This is to co-own a piece of equipment. Revenue generated from the usage of the equipment is shared with the partner. This will reduce the initial capital expenditure and share the risk. It may not be difficult to find a large business firm as a partner as long as there is a profit margin for it. This is financially feasible because when a patient uses the equipment, the hospital can each time charge him or her a fee higher than the cost of using it. Unlike the facilities in hotel, where guest has a choice to use or not to use them, patient has to use the equipment when he or she stays in the hospital for treatment.

As the cost of equipment is formidable, it is not possible for the hospital to purchase a piece of equipment by paying cash. As a result, some kind of financing arrangement must be made. Actual financing method depends on the kind of equipment, and negotiations with manufacturer and bank or finance company.

8.5 Estimated Capital Expenditure for Building & Equipment

It is estimated that the capital costs for building and equipment is HK$100 million for 100 beds. The estimation is based upon the newly built Tuen Mun Hospital, which is a regional government hospital. The set up costs for it was HK$1.2 billion with 1,606 beds when in full operation.

Another example is from Pondok Indah Hospital in Jakarta, Indonesia. It is the first private hospital in Indonesia, opened in December 1986 with 97 beds and the set up cost (or investment) was US$10 million (about HK$78 million). However the set up cost was in 1986 and the price structure in Indonesia is quite different from Hong Kong.

CHAPTER 9

FINANCIAL FEASIBILITY

For financial feasibility, emphasis is put on estimation of revenue and expenditure. From there, profit can be calculated. Payback period and return on investment will be ascertained. Comment on the attractiveness of the investment will be made.

9.1 Revenue (Appendix 20)

There are seven revenue sources. (1) accommodation i.e. hospital beds (3 classes) (2) meals (3) drugs (4) operation fee charged from contracted doctors (5) out-patients operation by full-time doctors (6) annual body-check plan by marketing department, and (7) rental income -- leasing some spaces to florist, newsstand.

Operation fee charged from contracted doctors is most difficult to estimate because such data from private hospital could not be collected (because of confidentiality). In addition, there is wide range of fees charged by contracted doctors to patients as it is case-dependent. It is assumed that the average operation fee for a hospital is about $15,000.

Other revenue estimations are more reliable. It can be estimated by observing the operational data from both

subvented and private hospitals.

It is expected that operation fee from contracted doctor accounts for 50% of revenue. And accommodation, meals and drugs account for 40% of revenue.

9.2 Recurring Expenditure (Appendix 20)

Annual recurring expenditure is expected to be HK$33.93 million. Nurse salary has the greatest share of about 50%.

9.3 Profit (Appendix 20)

Since operation fee is most difficult to estimate, let it be a variable in the profit analysis. The following table shows three profit scenarios:

	Average Operation Fee (HK$)		
	10,000	15,000	20,000
scenario	(1)	(2)	(3)
	pessimistic	most likely	optimistic
Operation fee (1,340 cases)	13,400,000	20,100,000	26,800,000
Other Revenue	17,740,000	17,740,000	17,740,000
Total Revenue	31,140,000	37,840,000	44,540,000
Total Expenditure	33,930,000	33,930,000	33,930,000
Profit	(2,790,000)	3,910,000	10,610,000

Using the Program Evaluation and Review Technique (PERT) and assuming a Beta distribution for the most pessimistic scenario (scenario 1), the most likely scenario (scenario 2), and the most optimistic scenario (scenario 3), the expected profit will be [(2.79) + 4 X 3.91 + 10.61] / 6 = 3.91 million dollars.

Payback period will be 100M / 3.91M = 25.6 years. This payback period seems quite long. Return on investment is (3.91 / 100) X 100% = 3.91%. which is rather low. In light of these unfavorable figures, the project is rather unattractive. It should, however, bear in mind that profit and return on investment figures are very dependent on the estimation of average fee for operations. A better estimation of operation fees will yield more reliable profit figures and resulting return on investment figure.

It is hoped that as the operation gets bigger, more revenue will be generated and fixed costs can be spread among grater number of patients.

CHAPTER 10

CONCLUSIONS

The proposed hospital can achieve the objective of self-financing because it can generate enough funds from its operations as shown in the calculations of income and expenditure. It needs to find investors to invest HK$100m with expected return on investment of only 3.91% and payback period of 25.6 years. From financial perspective, it is rather difficult to find these investors.

There should be no problem in procuring equipment as advanced equipment is available in the market and several financing options are available. On the human resources side, recruitment of medical experts, committed doctors, and nurses presents little no problem if the hospital provides best equipment, good working environment & systems, and competitive remuneration.

The success of opening the proposed hospital depends largely on the availability of land which in turn depends on the government. With limited land available in urban area and the long-term goal of the hospital to make profit, it is unlikely that the government will grant or lease a land at low price.

One way to overcome land problem is to acquire an existing private hospital. By acquiring the land, building and some equipment, the new hospital can put into operation in fairly short time. The ideal candidate is The Hong Kong Central Hospital Limited. Unfortunately, financial statements from this hospital could not be obtained. A detailed follow-up study on the purchase price and its feasibility is needed.

CHAPTER 11

LIMITATIONS

There are several limitations regarding the study:

(1) There is no sample of cancer center established in Hong Kong to serve as reference.

(2) Estimation in income and expenditure of the proposed hospital is based on the findings from the annual reports of several government and subvented hospitals. Financial data from private hospital cannot be obtained.

(3) The revenue of the contracted doctor's operation in a private hospital is difficult, if not impossible, to estimate as it depends on the kinds of operation and how much a contracted doctor charge a patient.

(4) The quality of the study is limited by the lack of expertise knowledge on medical aspect on the part of researcher.

However, this research reveals the need for establishing a new private general hospital but providing specialty service on treatment for cancer patients.

APPENDICES

LIST OF APPENDICES

Appendix 1[11]

Crude Death, Infant Mortality Rate, Life Expectancy In Different Countries (1984 figures)

Country	Crude Death Rate	Infant Mortality Rate	Life Expectancy At Birth in yr. Male	Female
Hong Kong	5.0	10.0	72.1	77.9
Japan	6.2	6.0	75.0	80.1
Indonesia	11.5	90.0	54.5	57.3
Malaysia	5.8	33.0	67.0	70.8
Philippines	8.1	60.0	60.6	64.2
Singapore	5.3	9.0	69.3	75.7
Thailand	7.8	56.0	61.2	65.1
Australia	7.6	10.0	71.2	78.2
New Zealand	8.0	13.0	71.1	77.3
U.K.	12.0	12.0	72.0 avg 2 sexes	
U.S.A.	9.0	13.0	73.0 avg 2 sexes	
W. Germany	12.0	12.0	72.0 avg 2 sexes	

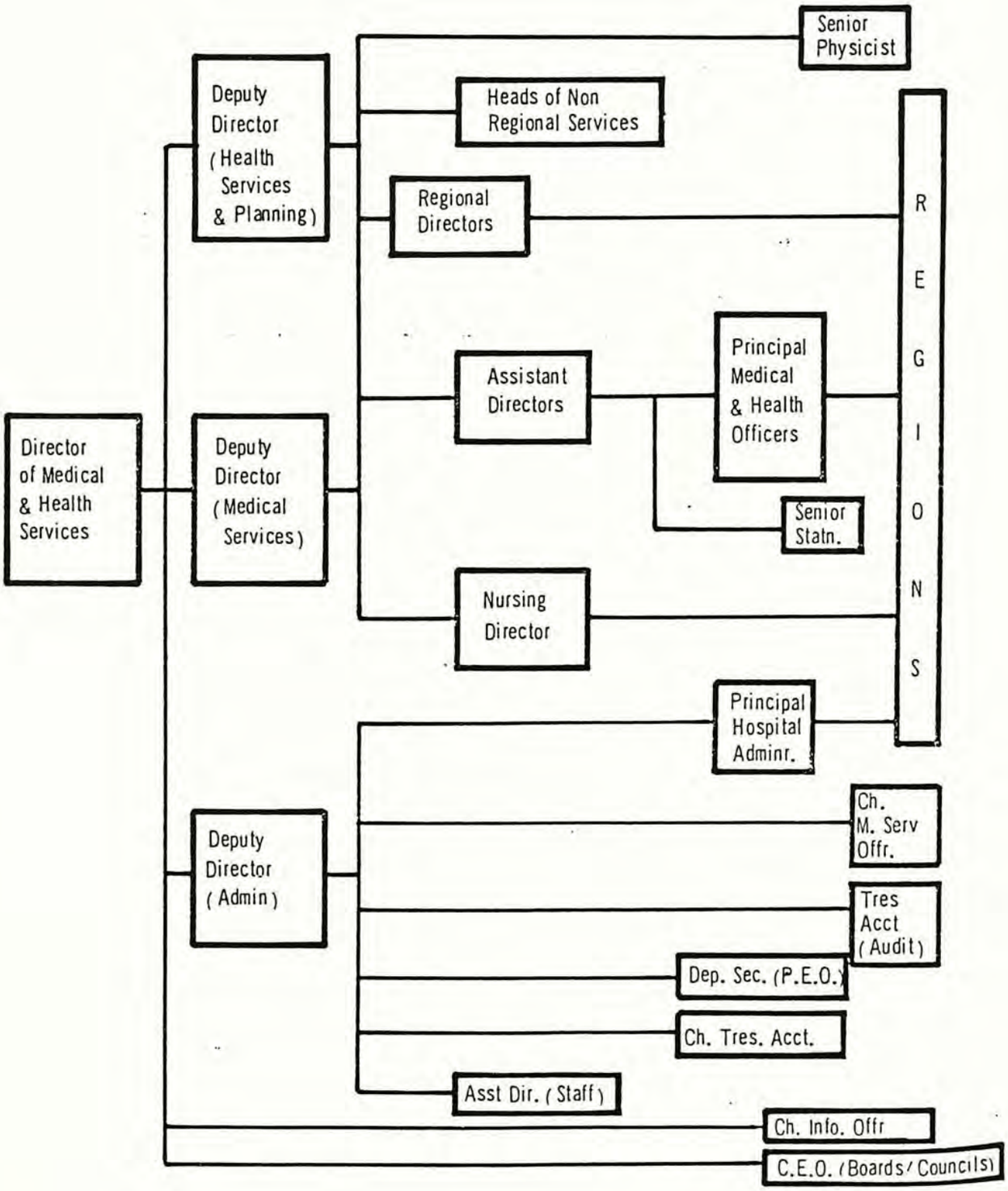
[11] Source: The Delivery Of Medical Services In Hospitals -- A Report For The Hong Kong Government, December 1985, p.3D-1

Appendix 2 Total Expenditure on Medical & Health Services

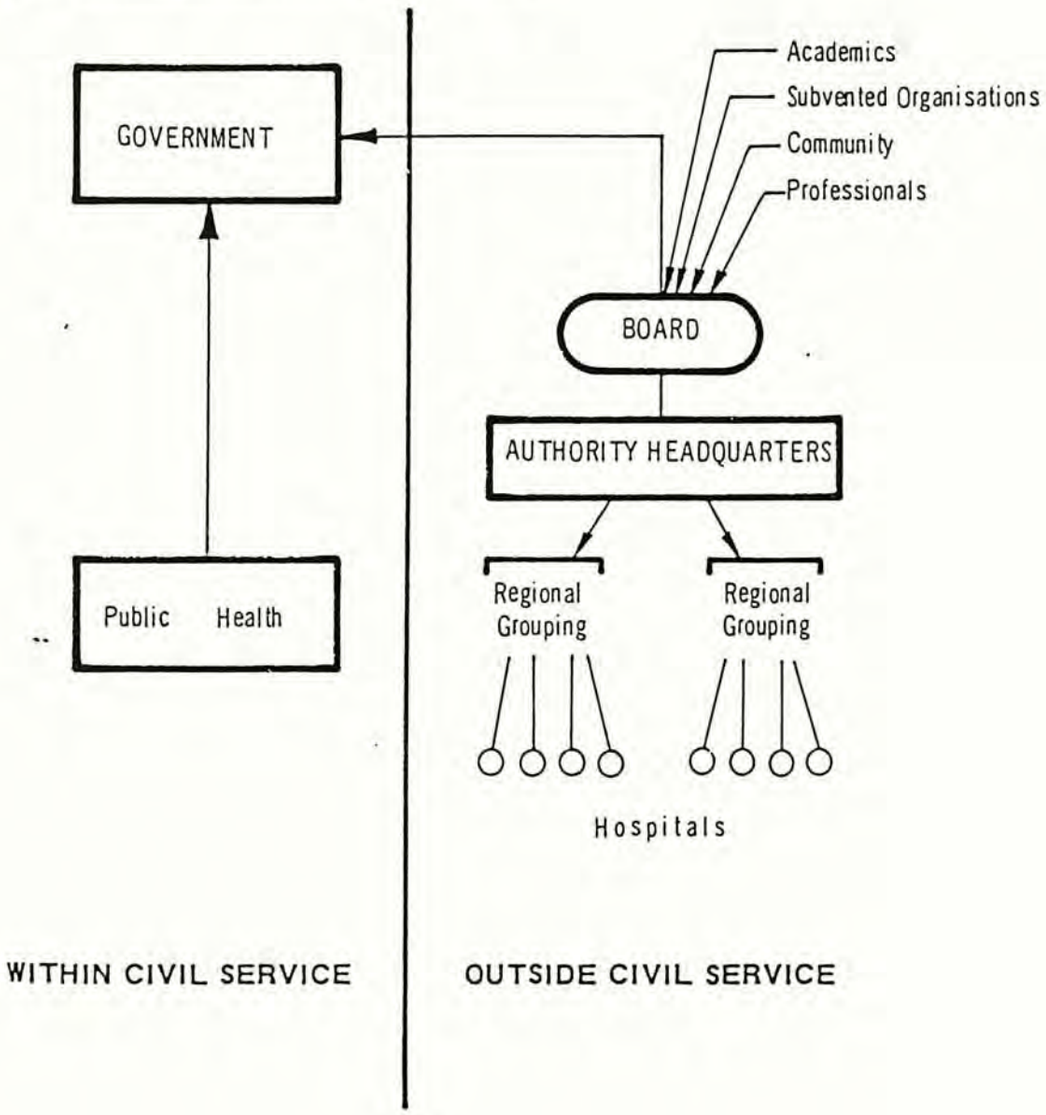
STATEMENT OF EXPENDITURE FORM 1983/84 TO 1987/88
(IN MILLIONS OF DOLLARS)

PARTICULAR	1983/84	1984/85	1985/86	1986/87	1987/88
Medical & Health Dept	1,790	2,085	2,388	2,775	3,095
Medical Subventions	912	1,004	1,132	1,268	1,425
Capital Expenditure on Medical Projects under Public Works	229	178	250	458	532
TOTAL	2,931	3,267	3,770	4,501	5,052
General Revenue Account Expenditure of HK Gov't	33,393	36,902	39,798	39,928	44,022
% of Medical & Health Dept Expenditure to the General Revnue Account Expenditure of HK Gov't	8.78%	8.85%	9.47%	11.27%	11.48%

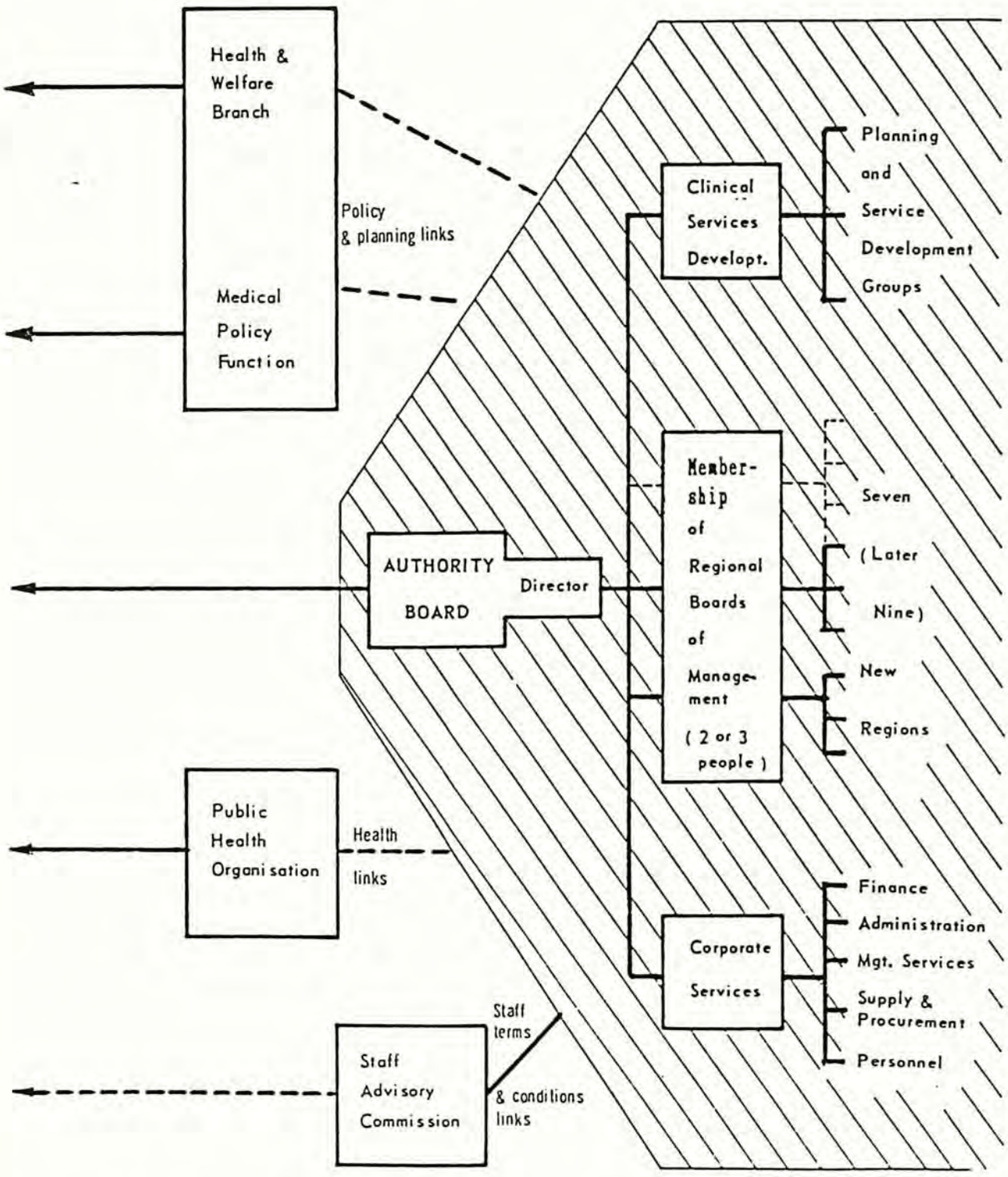
Appendix 3 Medical & Health Department Structure



OUTLINE AUTHORITY STRUCTURE

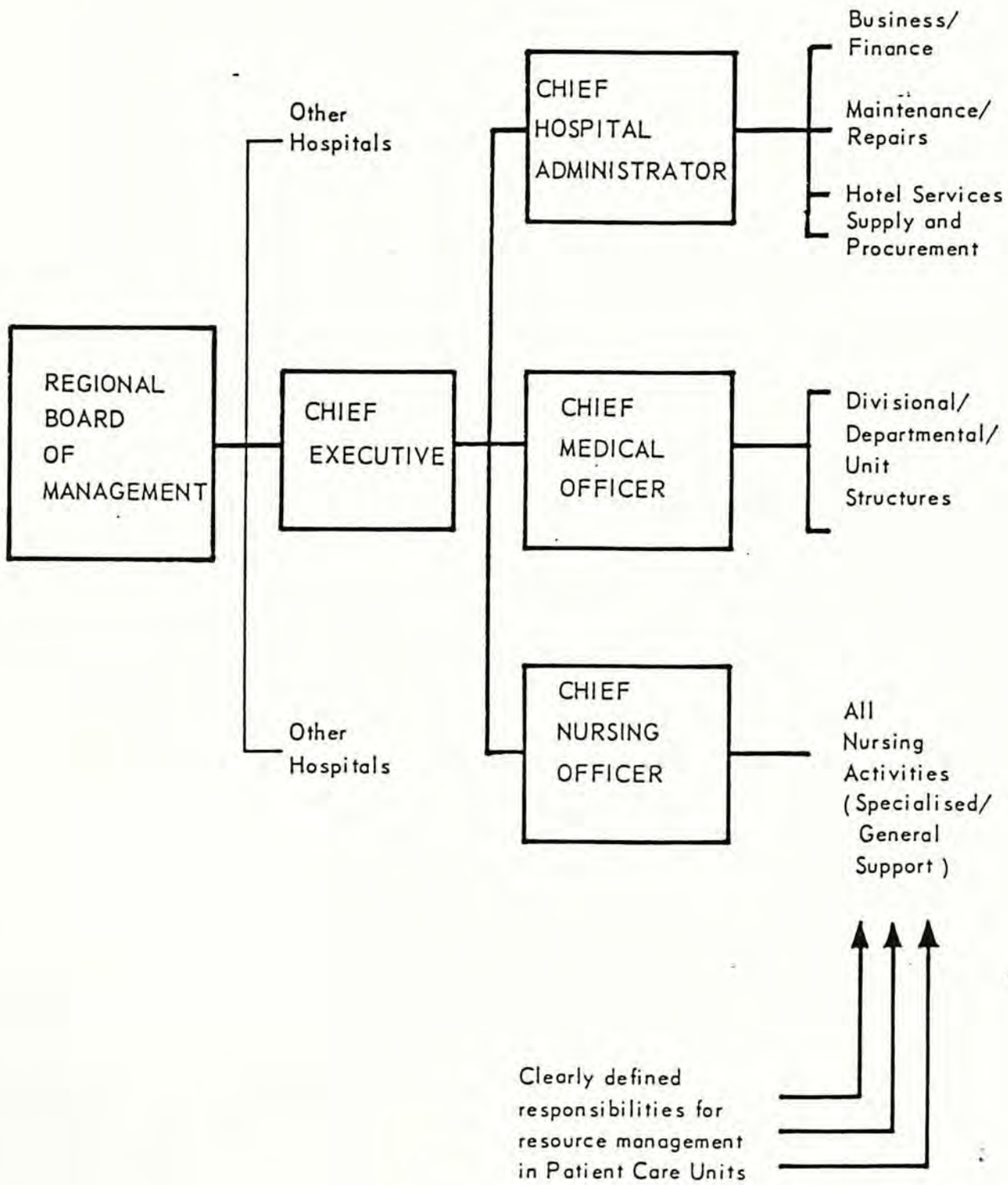


HOSPITAL AUTHORITY STRUCTURE AND RELATIONSHIPS

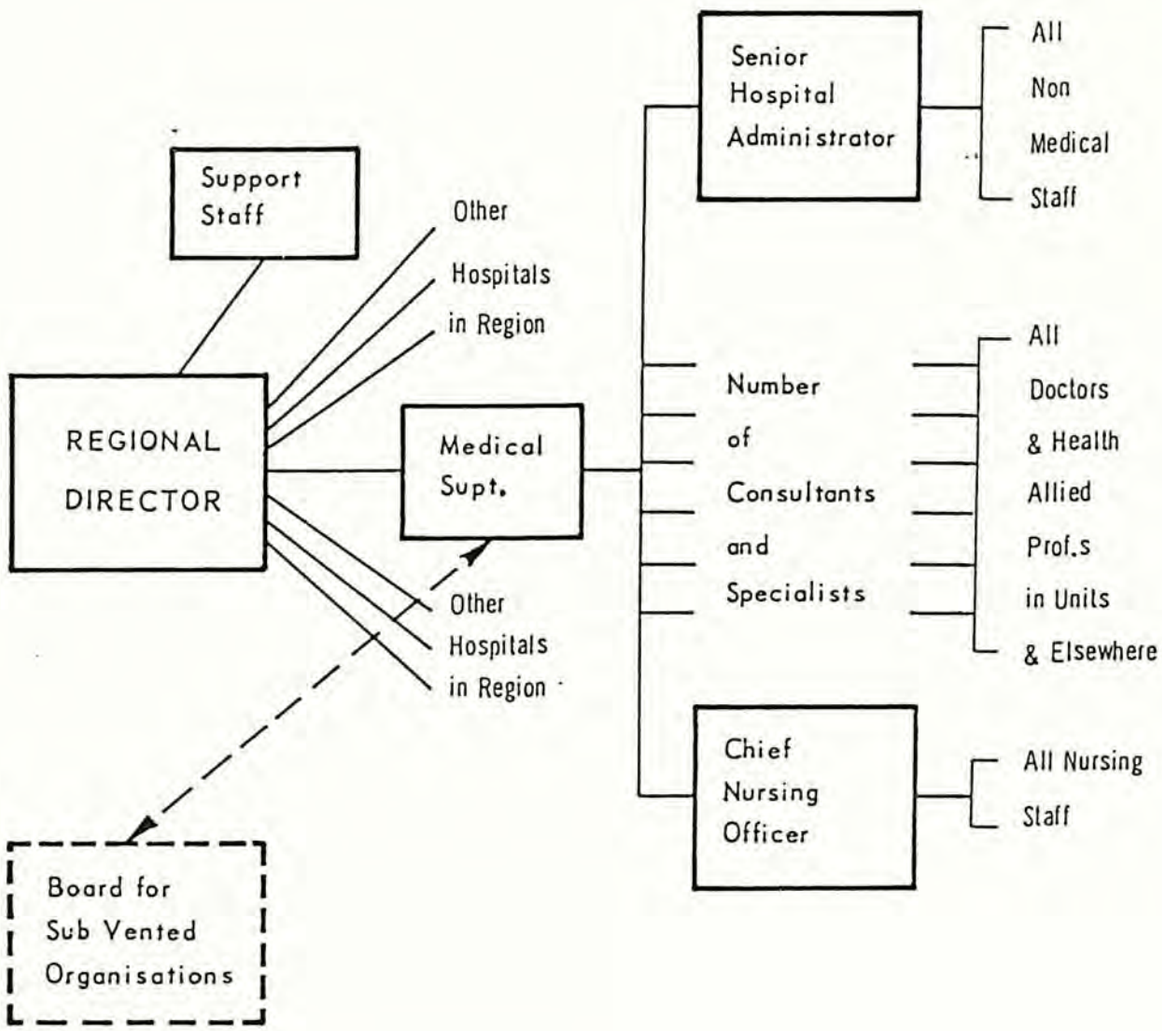


All organisations report ultimately to Government but Authority & Staff Advisory Commission are outside

OVERALL STRUCTURE FOR MAJOR HOSPITALS

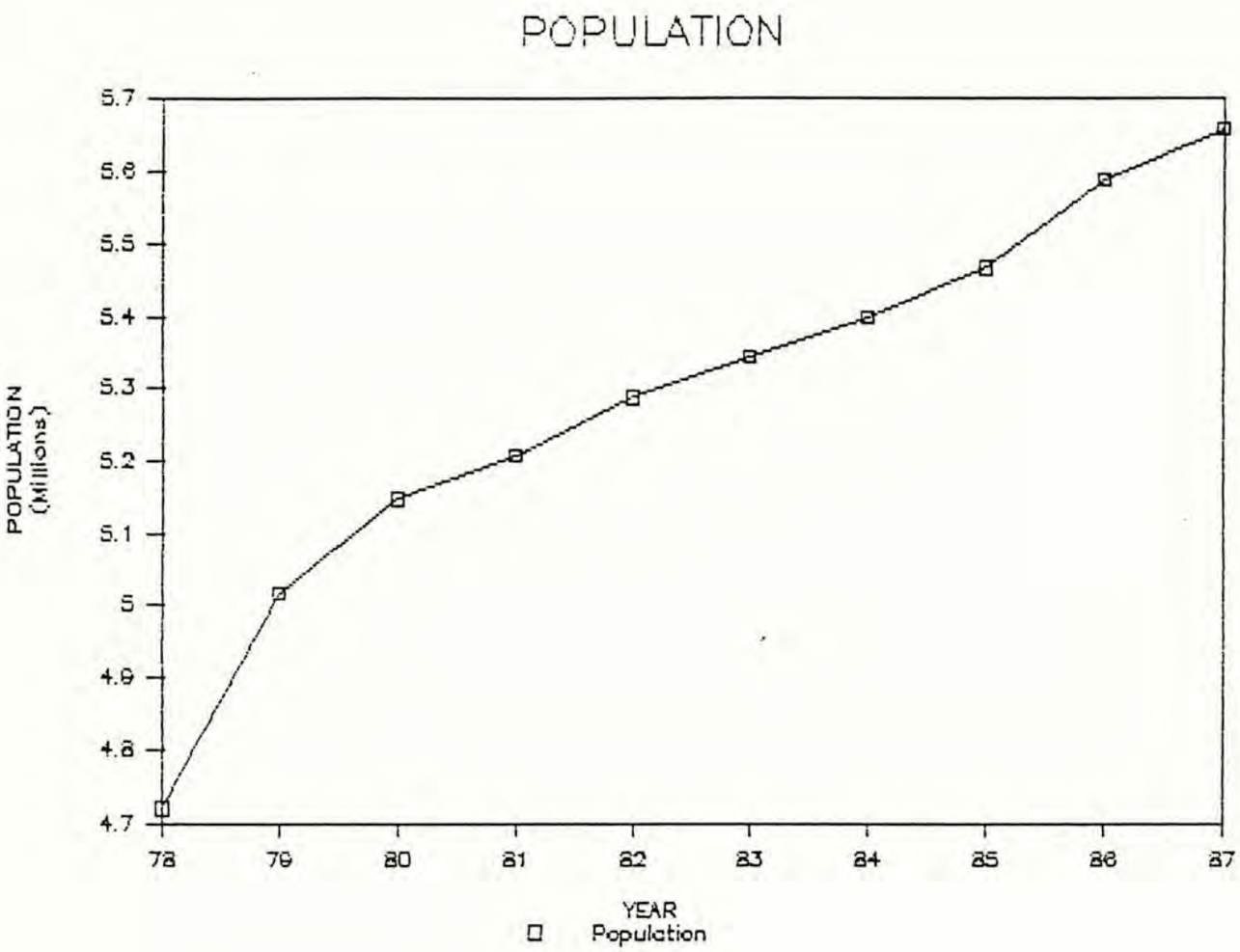


TYPICAL PRESENT MAJOR HOSPITAL STRUCTURE

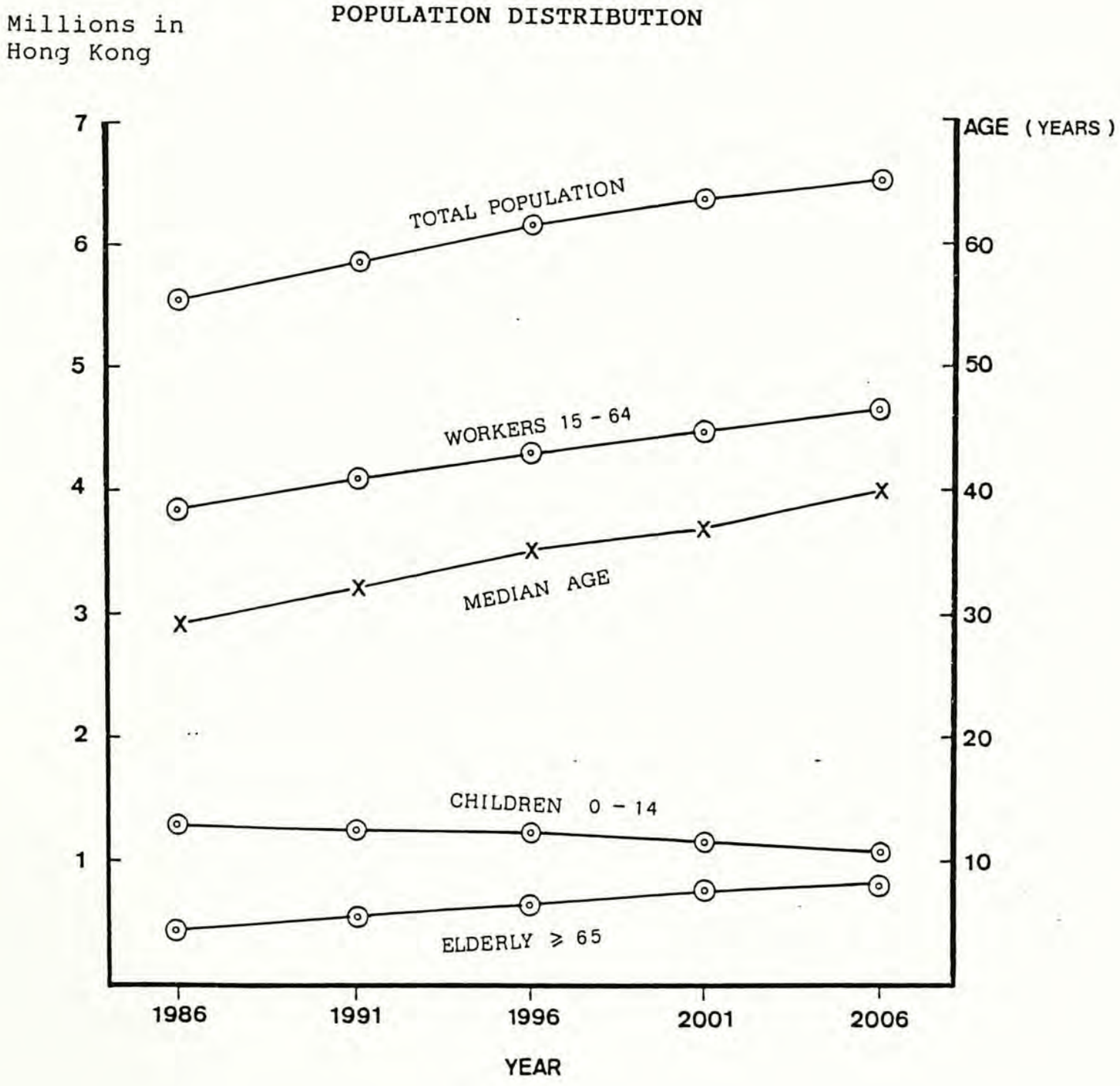


Source - Medical & Health Department

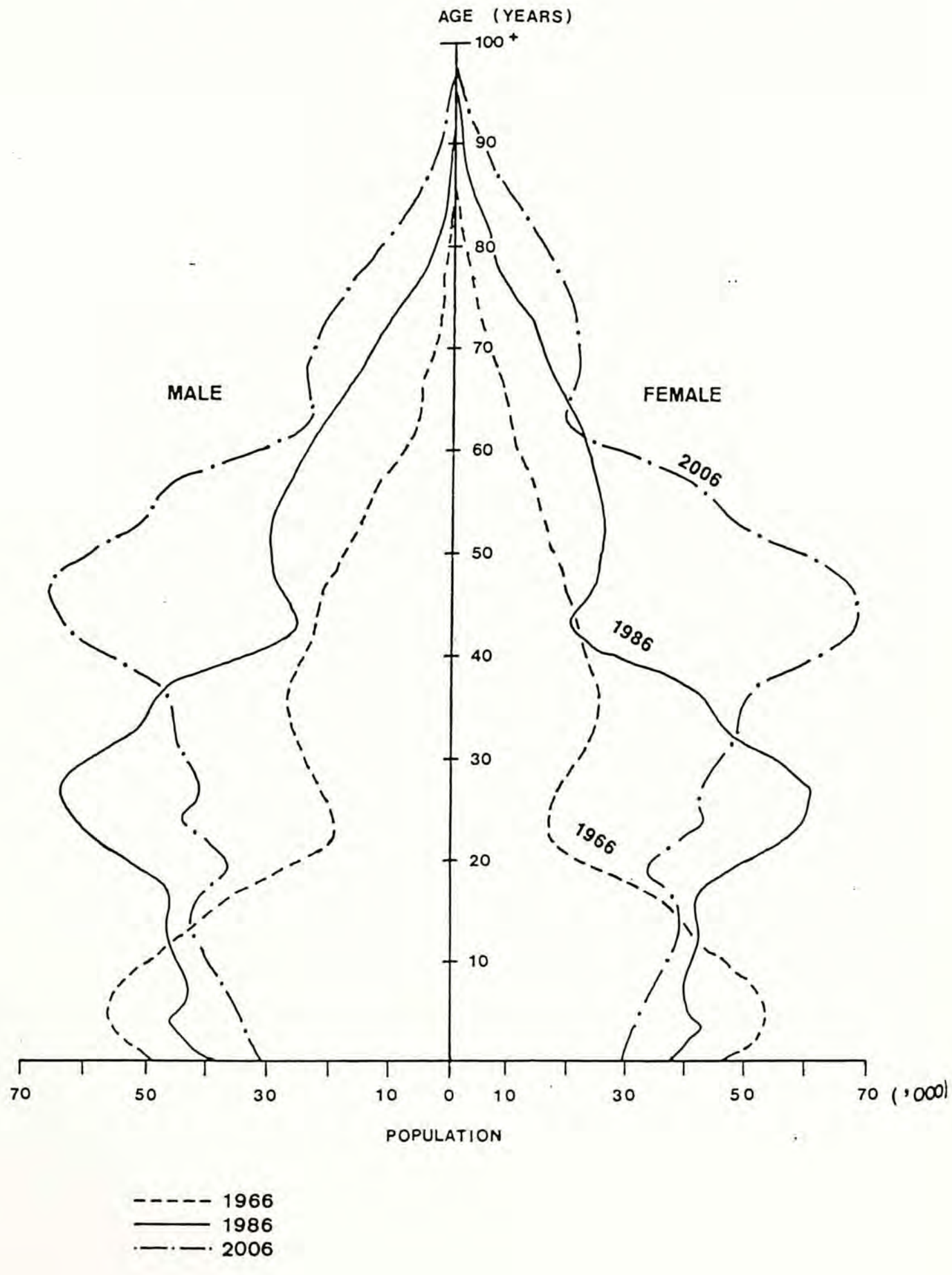
The pattern is followed in virtually all hospitals with the exception of only the very smallest in which some of the functions may be combined.

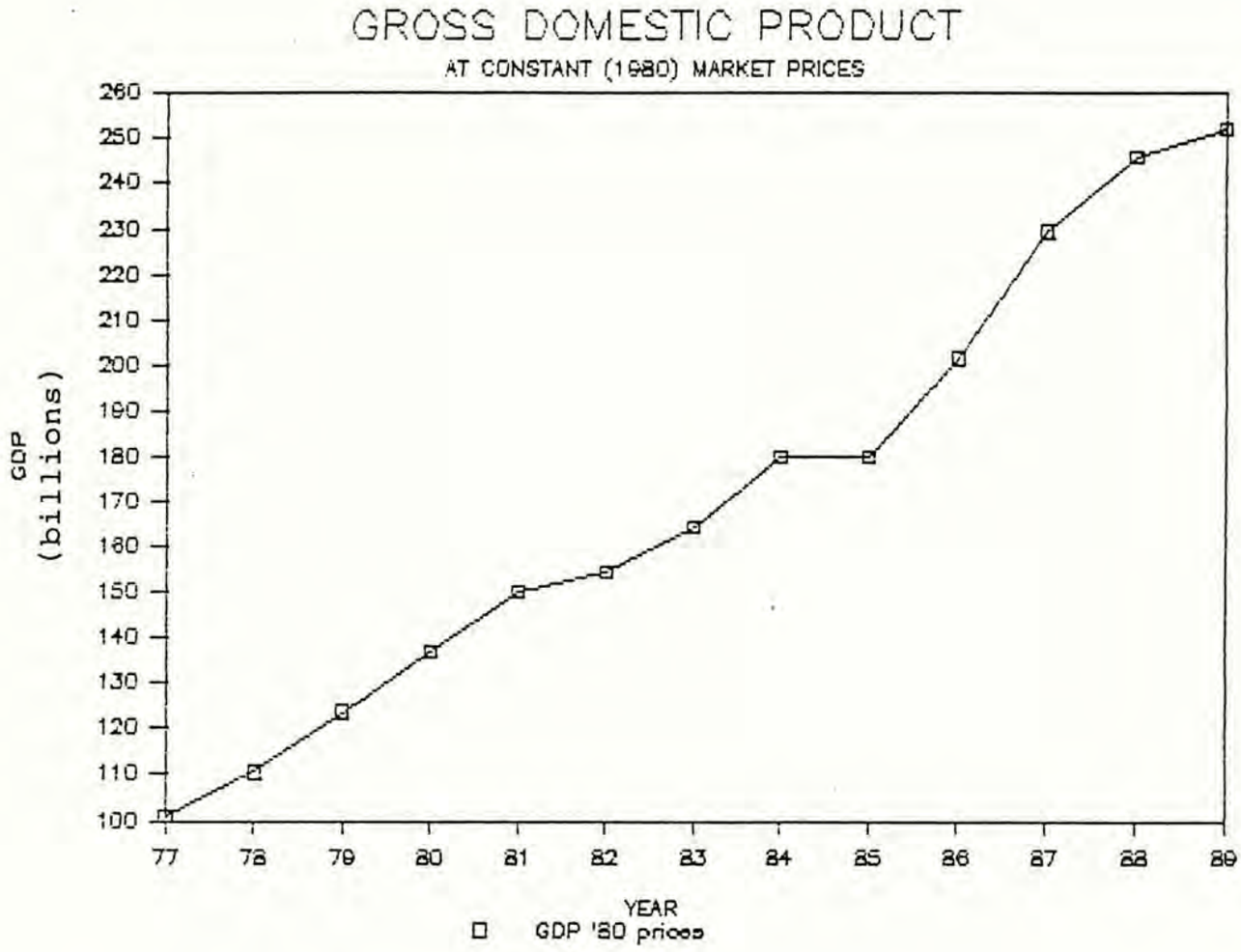


Year	Population (Pop)
78	4,720,200
79	5,017,000
80	5,147,900
81	5,207,000
82	5,287,800
83	5,344,400
84	5,397,500
85	5,466,900
86	5,588,000
87	5,658,800


POPULATION DISTRIBUTION
Millions in Hong Kong
AGE (YEARS)
TOTAL POPULATION
WORKERS 15 - 64
MEDIAN AGE
CHILDREN 0 - 14
ELDERLY ≥ 65
7
6
5
4
3
2
1
60
50
40
30
20
10
1986
1991
1996
2001
2006
YEAR

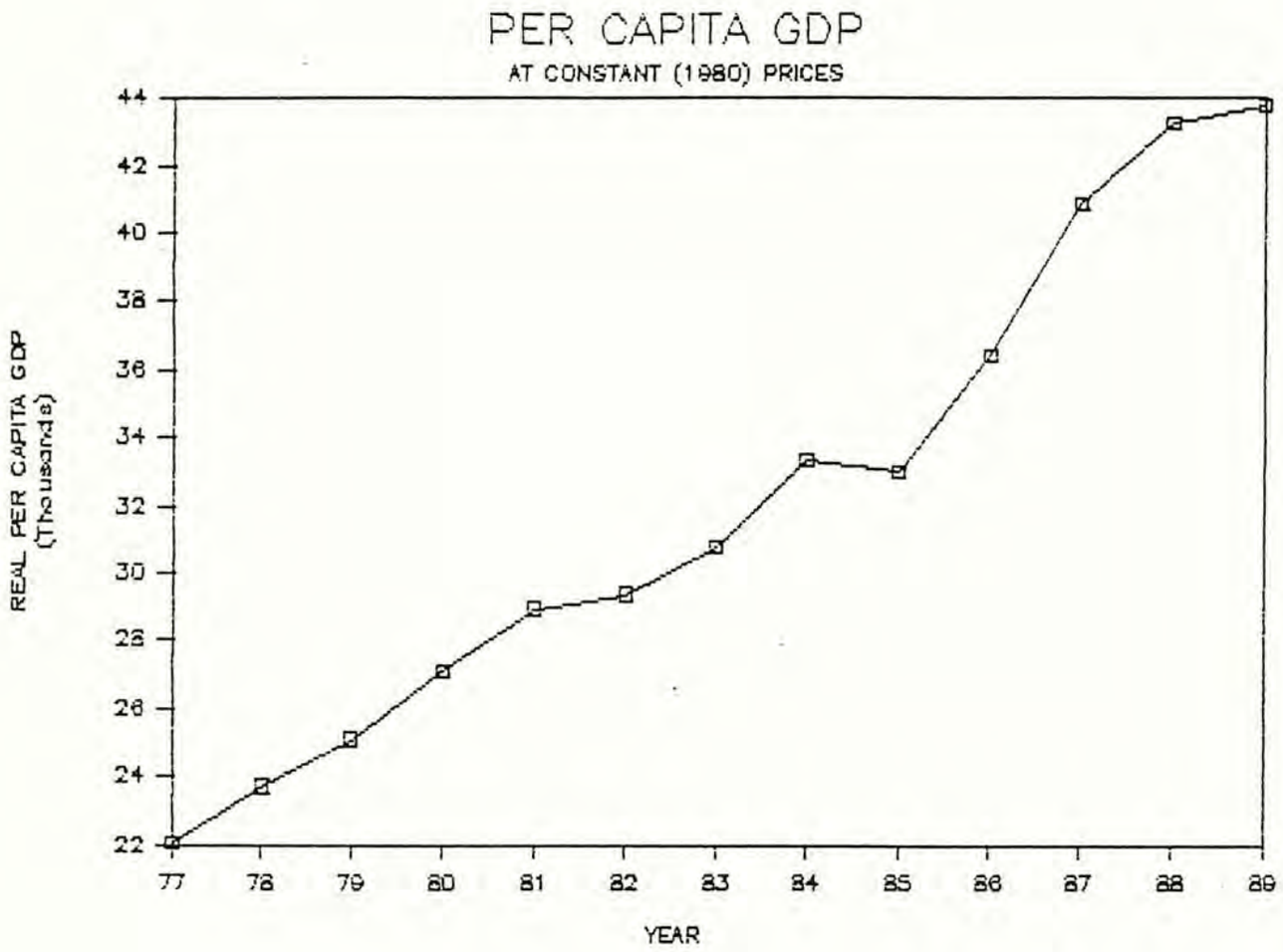
POPULATION PYRAMID ON SEX AND AGE OF 1966, 1986 & 2006



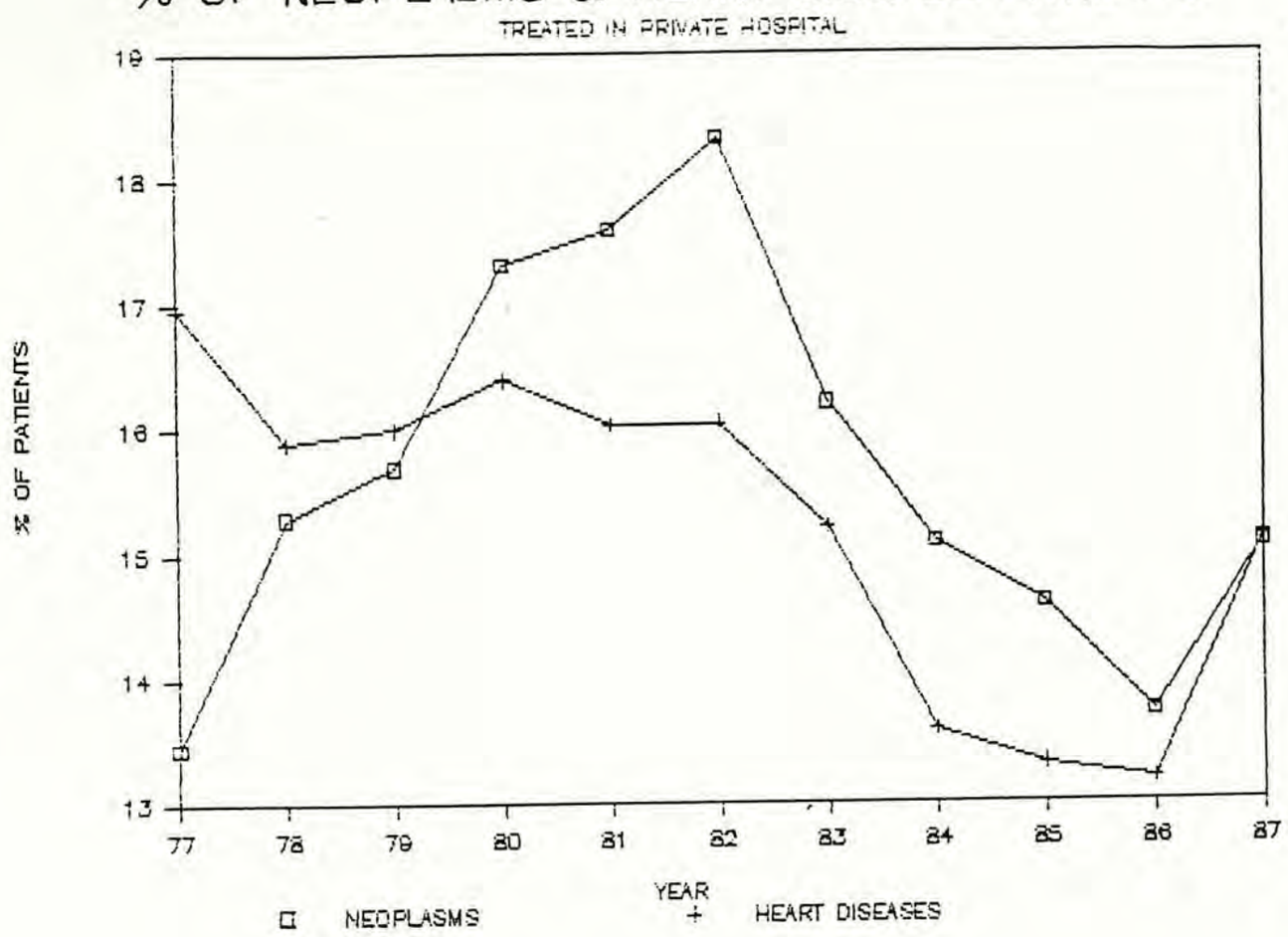


REAL GDP AND PER CAPITA GDP

Year	GDP constant 1980 prices (HK$ Million)	Per capita GDP ($)
77	101,124	22,062
78	110,725	23,723
79	123,642	25,081
80	137,081	27,075
81	149,987	28,936
82	154,512	29,350
83	164,550	30,785
84	180,149	33,374
85	179,946	32,980
86	201,350	36,393
87	229,421	40,870
88	245,919	43,286
89	252,099	43,757


PER CAPITA GDP
AT CONSTANT (1980) PRICES
REAL PER CAPITA GDP
(Thousands)
44
42
40
38
36
34
32
30
28
26
24
22
77
78
79
80
81
82
83
84
85
86
87
88
89
YEAR

Appendix 13 % of Patients Treated in Private Hospital (Neoplasms & Heart diseases Patients)



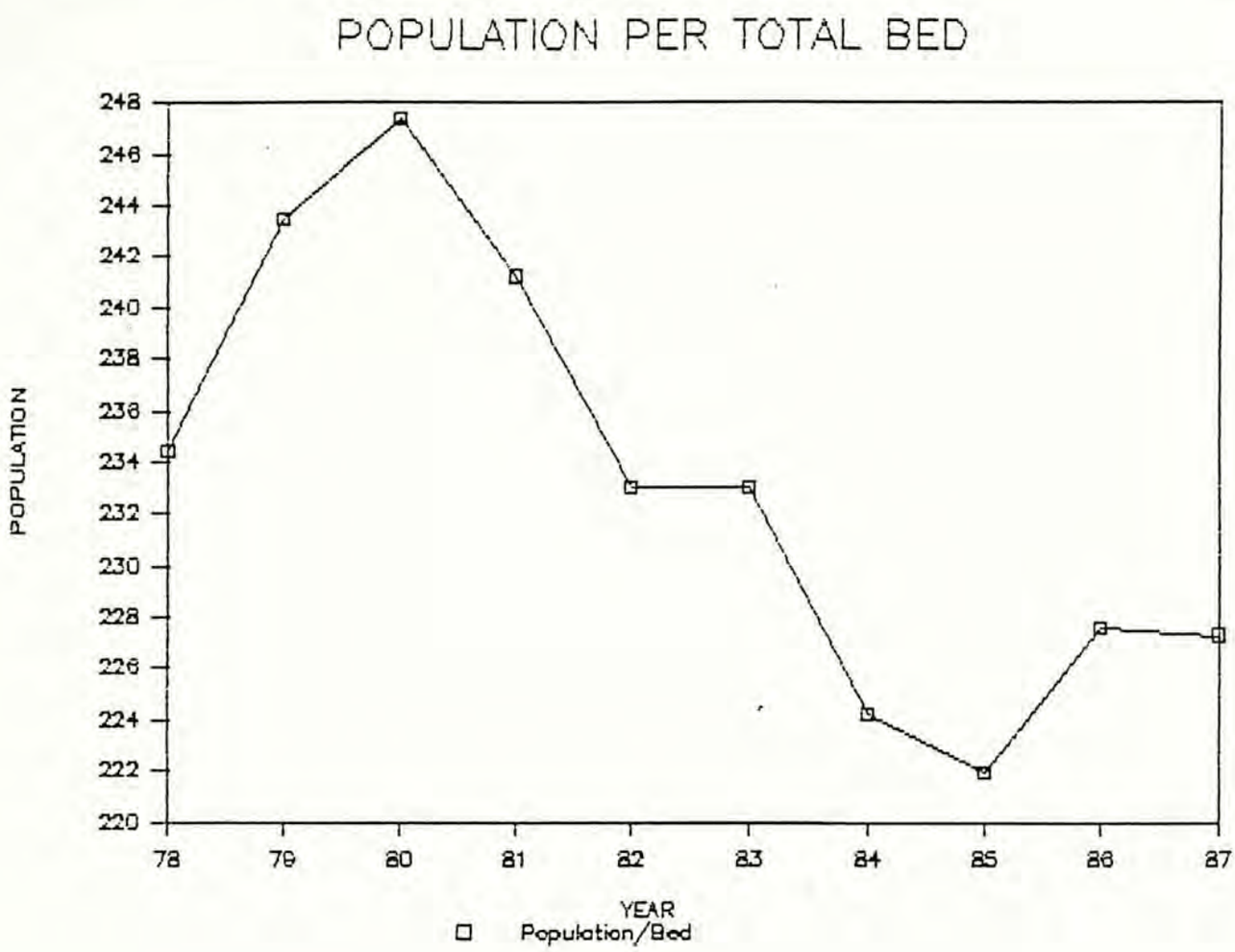
NEOPLASMS PTATIENTS TREATED IN HOSPITAL

YEAR	GOV'T	SUBVENTED	PRIVATE	TOTAL	PERCENTAGE IN PRIVATE
77	16,886	10,709	4,281	31,876	13.4
78	17,996	11,955	5,405	35,356	15.3
79	18,697	12,698	5,841	37,236	15.7
80	18,665	12,603	6,543	37,811	17.3
81	20,096	12,751	7,006	39,853	17.6
82	22,261	13,913	8,119	44,293	18.3
83	24,458	16,106	7,842	48,406	16.2
84	27,366	16,812	7,849	52,027	15.1
85	30,869	16,689	8,132	55,690	14.6
86	33,793	17,673	8,181	59,647	13.7
87	35,383	17,472	9,386	62,241	15.1

HEART DISEASES PATIENTS TREATED IN HOSPITAL

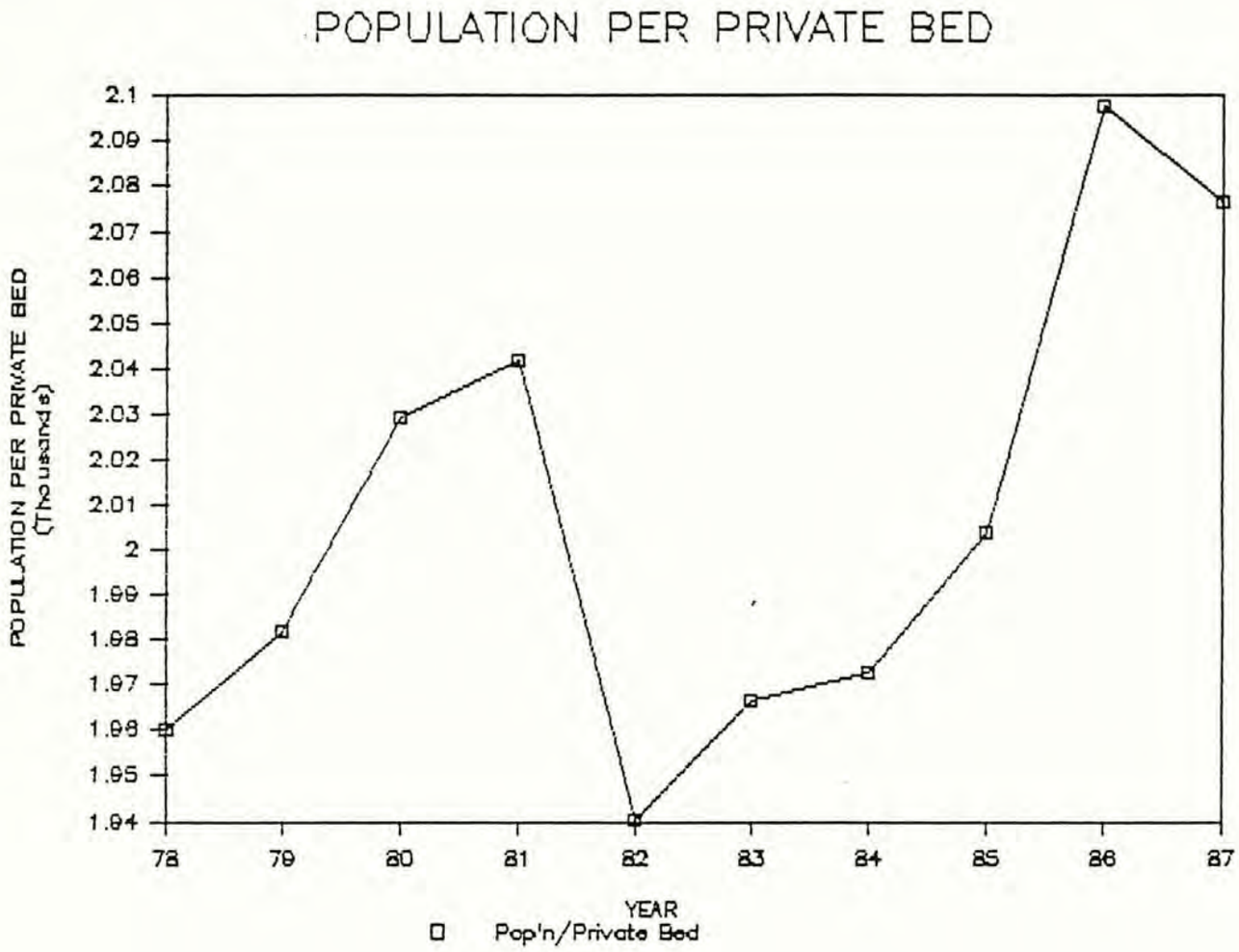
YEAR	GOV'T	SUBVENTED	PRIVATE	TOTAL	PERCENTAGE IN PRIVATE
77	8,376	7,957	3,334	19,667	16.95
78	9,528	9,365	3,569	22,462	15.89
79	10,485	8,728	3,657	22,870	15.99
80	10,903	8,791	3,860	23,554	16.39
81	11,326	8,952	3,867	24,145	16.02
82	12,002	10,096	4,220	26,318	16.03
83	12,767	11,499	4,354	28,620	15.21
84	13,338	11,558	3,911	28,807	13.58
85	13,909	11,321	3,872	29,102	13.30
86	15,068	11,220	3,993	30,281	13.19
87	15,721	11,884	4,914	32,519	15.11

Appendix 14 Population Per Total Bed



The Ratio of Total Population to Number of Beds

Year	Population (Pop)	Govern't (Gov)	(Pop)/ (Gov)	Subvent (Sub)	(Pop)/ (Sub)	Private (Pri)	(Pop)/ (Pri)	Total (Tot)	(Pop)/ (Tot)
78	4,720,200	9,380	503	8,347	565	2,408	1,960	20,135	234
79	5,017,000	9,445	531	8,630	581	2,531	1,982	20,606	243
80	5,147,900	9,684	532	8,585	600	2,537	2,029	20,806	247
81	5,207,000	10,281	506	8,755	595	2,550	2,042	21,586	241
82	5,287,800	10,743	492	9,222	573	2,725	1,940	22,690	233
83	5,344,400	10,881	491	9,336	572	2,718	1,966	22,935	233
84	5,397,500	11,759	459	9,578	564	2,736	1,973	24,073	224
85	5,466,900	12,288	445	9,622	568	2,728	2,004	24,638	222
86	5,588,000	12,285	455	9,601	582	2,664	2,098	24,550	228
87	5,658,800	12,631	448	9,540	593	2,725	2,077	24,896	227


POPULATION PER PRIVATE BED
POPULATION PER PRIVATE BED (Thousands)
2.1
2.09
2.08
2.07
2.06
2.05
2.04
2.03
2.02
2.01
2
1.99
1.98
1.97
1.96
1.95
1.94
78
79
80
81
82
83
84
85
86
87
YEAR
Pop'n/Private Bed

Appendix 16 Information on Cancer[12]

What is cancer?

Cancer is really a group of diseases. There are more than 100 different types of cancer, but they all are a disease of some of the body's cells.

Healthy cells that make up the body's tissues grow, divide, and replace themselves in an orderly way. This process keeps the body in good repair. Sometimes, however, normal cells lose their ability to limit and direct their growth. They divide too rapidly and grow without any order. Too much tissue is produced and tumors begin to form. Tumors can be either benign or malignant.

* Benign tumors are not cancer. They do not spread to other parts of the body and they are seldom a threat to life. Often, benign tumors can be removed by surgery, and they are not likely to return.

* Malignant tumors are cancer. They can invade and destroy nearby tissue and organs. Cancer cells also can spread, or metastasize, to other parts of the body, and form new tumors.

Because cancer can spread, it is important for the doctor to find out as early as possible if a tumor is present and if it is cancer. As soon as a diagnosis is made, treatment can begin.

Signs and symptoms of cancer

Cancer and other illnesses often cause a number of problems you can watch for. The most common warning signs of cancer are:

* Change in bowel or bladder habits;
* A sore that does not heal;
* Unusual bleeding or discharge;
* Thickening or lump in the breast or elsewhere;
* Indigestion or difficulty swallowing;
* Obvious change in a wart or mole;
* Nagging cough or hoarseness.

These signs and symptoms can be caused by cancer or by a umber of other problems. They are not a sure sign of cancer. However, it is important to see a doctor if any problem lasts as long as 2 weeks. Don't wait for symptoms to become painful; pain is not an early sign of cancer.

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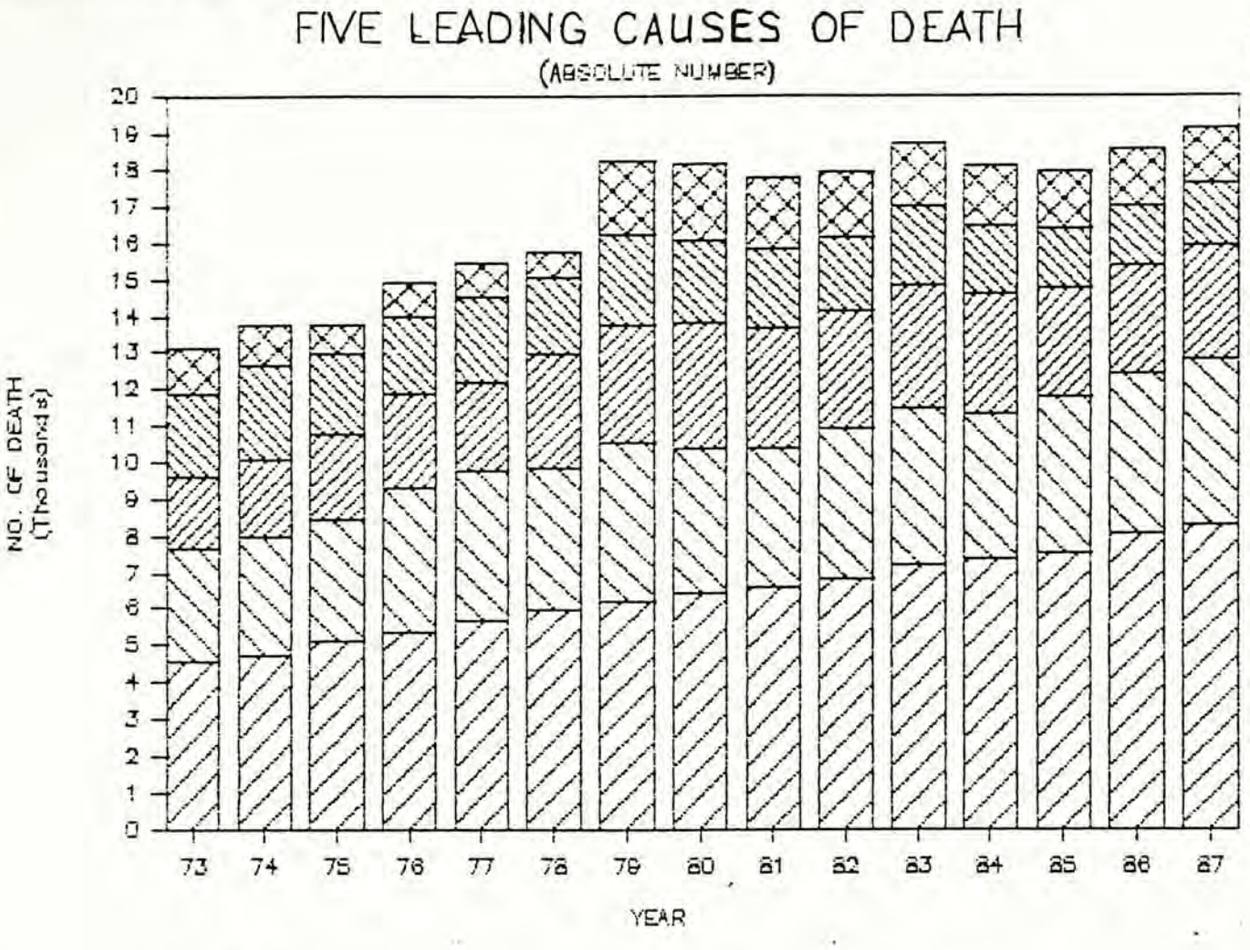
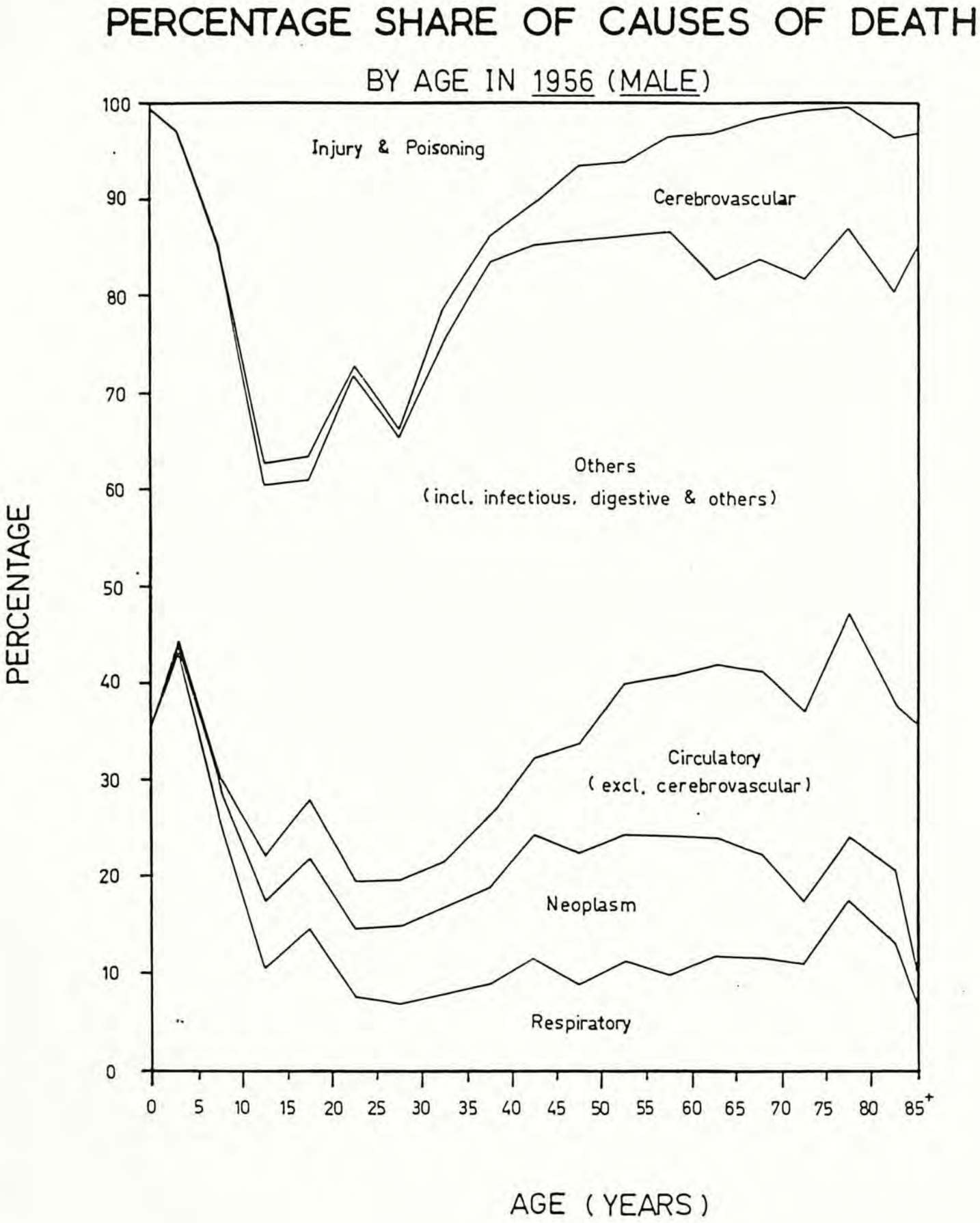
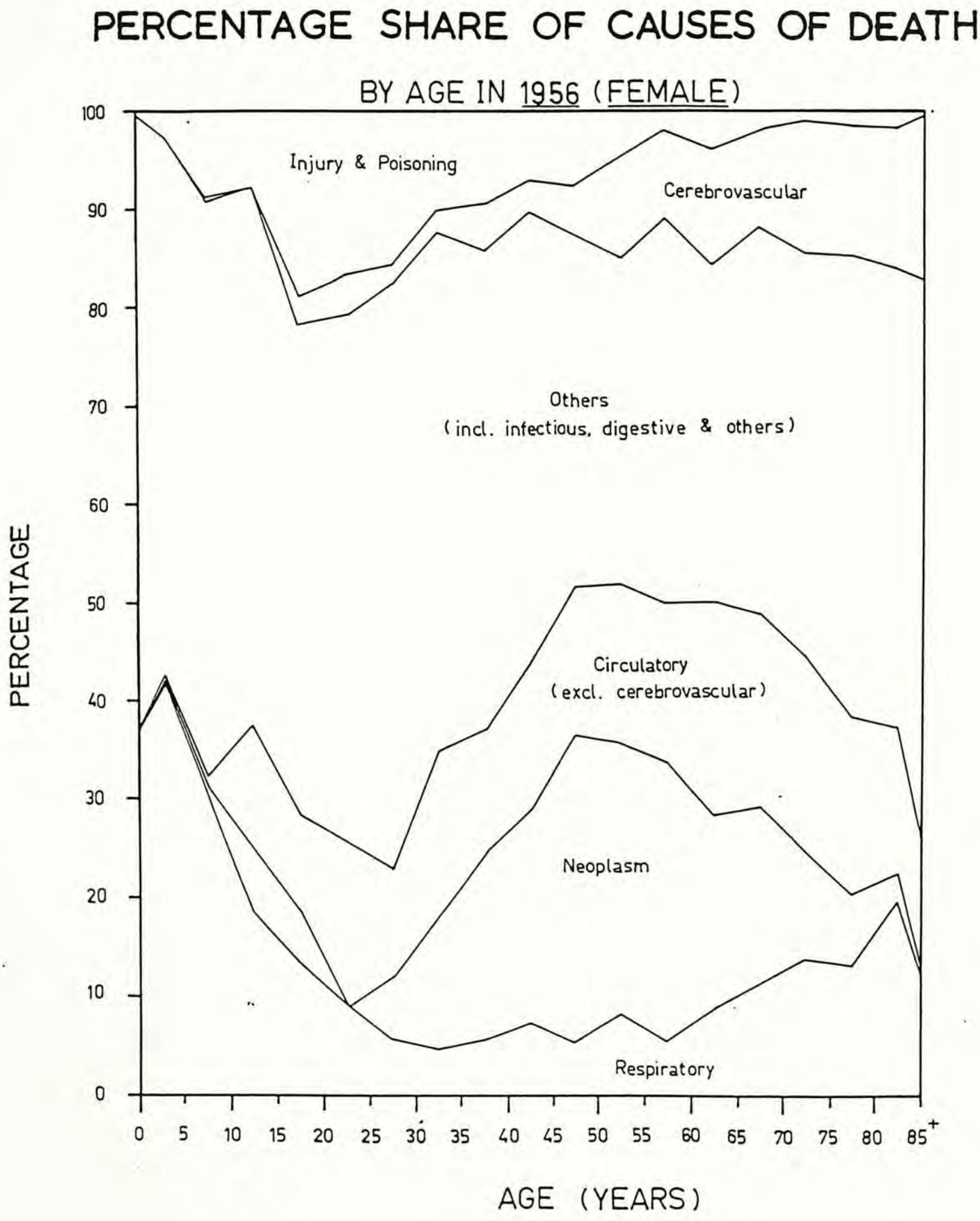
[12] Source: "What You Need To Know About Cancer", booklet issued by The National Cancer Institute (NCI)



FIVE LEADING CAUSES OF DEATH

YEAR	ALL CAUSES	NEOPLASMS	HEART DISEASES	CEREBRO-VASCULAR	PNEUMONIA ALL FORMS	INJURY & POISONING
73	21,360	4,539	3,111	1,978	2,238	1,244
74	22,050	4,683	3,270	2,105	2,563	1,127
75	21,191	5,105	3,311	2,336	2,188	780
76	23,195	5,368	3,967	2,520	2,119	951
77	23,459	5,652	4,135	2,422	2,312	944
78	22,843	5,978	3,893	3,081	2,087	688
79	26,179	6,203	4,310	3,245	2,443	2,066
80	25,987	6,430	3,972	3,421	2,277	2,078
81	24,978	6,586	3,829	3,252	2,133	1,943
82	25,640	6,810	4,104	3,193	2,006	1,849
83	26,485	7,226	4,282	3,309	2,198	1,700
84	25,580	7,347	4,005	3,230	1,983	1,593
85	25,325	7,535	4,211	2,959	1,634	1,603
86	26,030	8,054	4,337	2,976	1,591	1,576
87	26,959	8,258	4,515	3,136	1,681	1,584
AVERAGE GROWTH RATE:	1.80	4.39	2.94	3.67	-1.49	9.17


PERCENTAGE SHARE OF CAUSES OF DEATH
BY AGE IN 1956 (MALE)
Injury & Poisoning
Cerebrovascular
Others
(incl. infectious, digestive & others)
Circulatory
(excl. cerebrovascular)
Neoplasm
Respiratory
PERCENTAGE
AGE (YEARS)
0
10
20
30
40
50
60
70
80
90
100
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85+


PERCENTAGE SHARE OF CAUSES OF DEATH
BY AGE IN 1956 (FEMALE)
Injury & Poisoning
Cerebrovascular
Others
(incl. infectious, digestive & others)
Circulatory
(excl. cerebrovascular)
Neoplasm
Respiratory
PERCENTAGE
AGE (YEARS)
0
10
20
30
40
50
60
70
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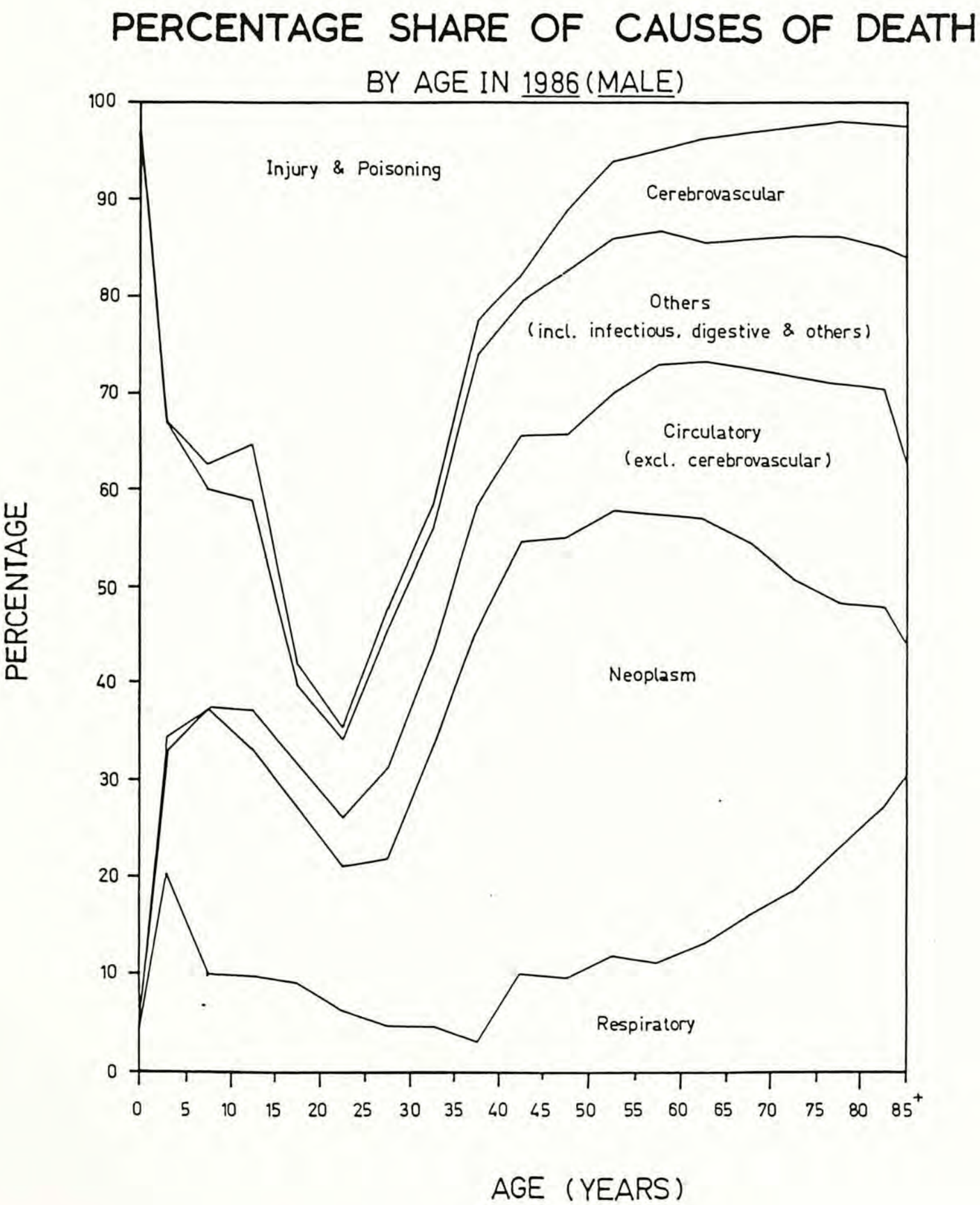
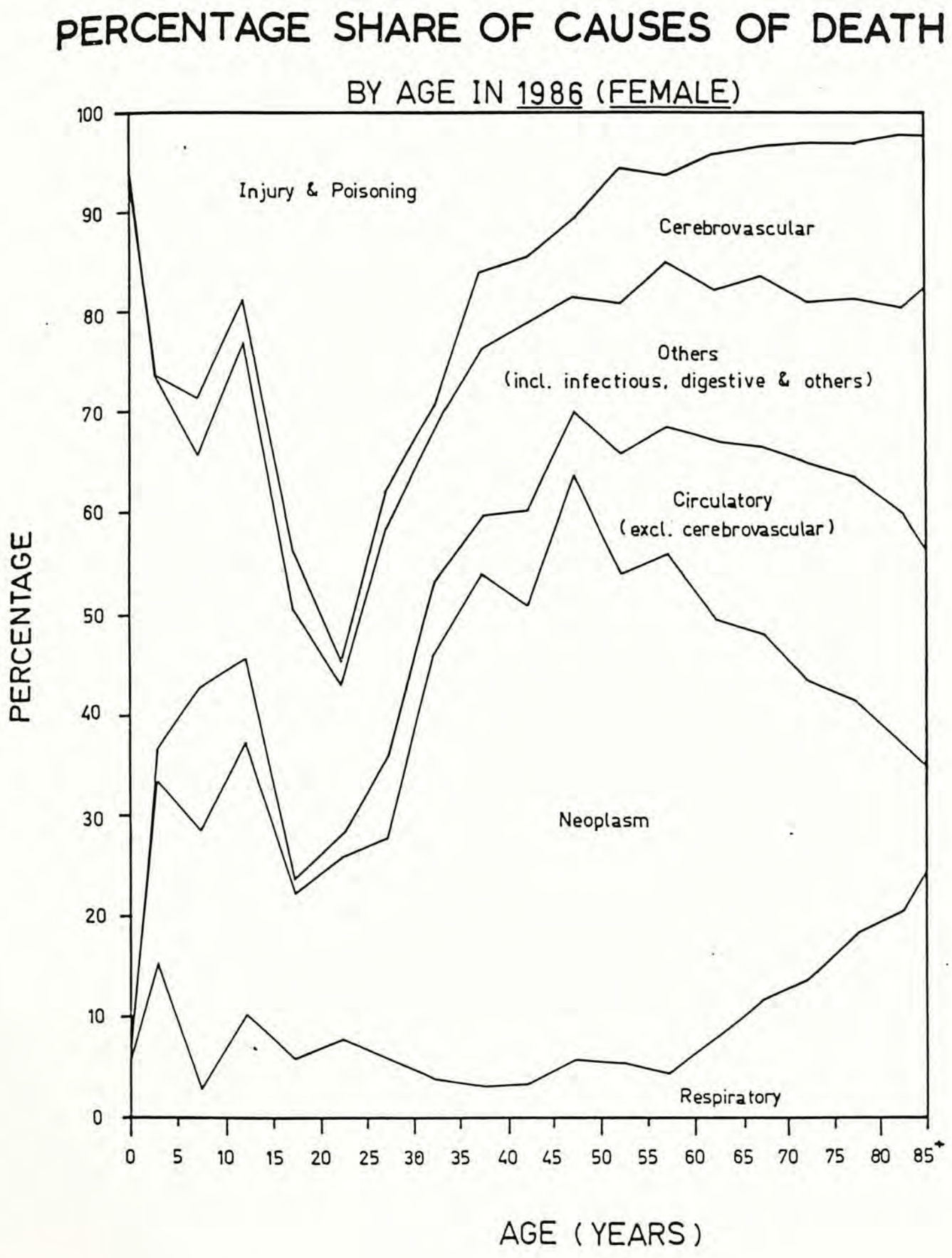
100
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85+


PERCENTAGE SHARE OF CAUSES OF DEATH
BY AGE IN 1986 (MALE)
Injury & Poisoning
Cerebrovascular
Others
(incl. infectious, digestive & others)
Circulatory
(excl. cerebrovascular)
Neoplasm
Respiratory
PERCENTAGE
AGE (YEARS)
0
10
20
30
40
50
60
70
80
90
100
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85+


PERCENTAGE SHARE OF CAUSES OF DEATH
BY AGE IN 1986 (FEMALE)
Injury & Poisoning
Cerebrovascular
Others
(incl. infectious, digestive & others)
Circulatory
(excl. cerebrovascular)
Neoplasm
Respiratory
PERCENTAGE
AGE (YEARS)
0
10
20
30
40
50
60
70
80
90
100
0
5
10
15
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25
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45
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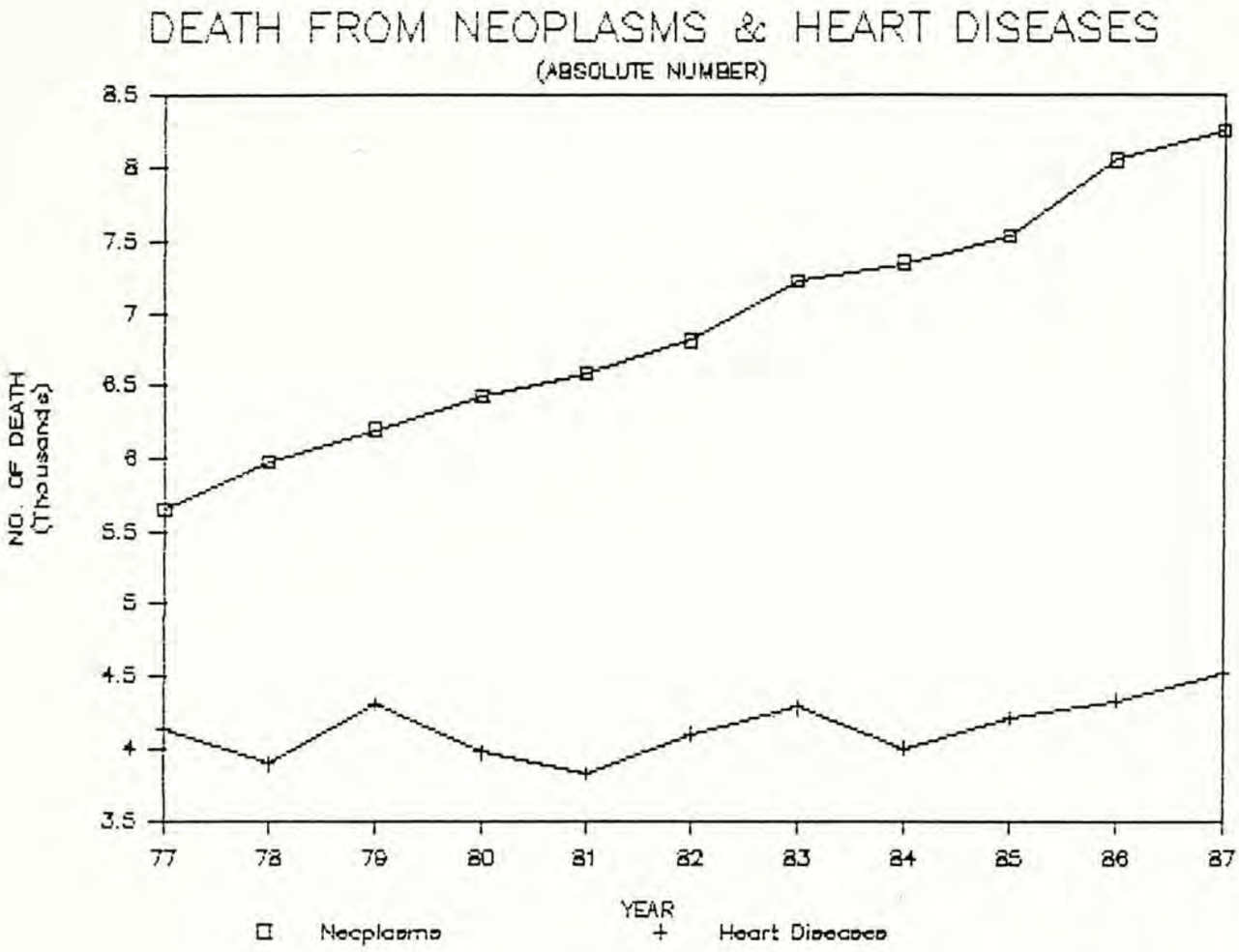
55
60
65
70
75
80
85+



DEATH FROM:

YEAR	POPULATION	NEOPLASMS	% OF POP	HEART DISEASES	% OF POP
77	4,566,900	5,652	0.1238	4135	0.0905
78	4,720,200	5,978	0.1266	3893	0.0825
79	5,017,000	6,203	0.1236	4310	0.0859
80	5,147,900	6,430	0.1249	3972	0.0772
81	5,207,000	6,586	0.1265	3829	0.0735
82	5,287,800	6,810	0.1288	4104	0.0776
83	5,344,400	7,226	0.1352	4282	0.0801
84	5,397,500	7,347	0.1361	4005	0.0742
85	5,466,900	7,535	0.1378	4211	0.0770
86	5,588,000	8,054	0.1441	4337	0.0776
87	5,658,800	8,258	0.1459	4515	0.0798

Appendix 20 Income & Expenditure of the Proposed Hospital

SCENARIO 1: OPERATION FEE IS ASSUMED TO BE AVERAGE $10,000 PER CASE

MODEL HOSPITAL
WITH 100 BEDS

REVENUE:					
BEDS	class	no.	price	total	
	1st class	8	1800	14,400	
	2nd class	14	500	7,000	
	3rd class	78	200	15,600	
		100		37,000	10,804,000
MEALS	$30 X 2.5 X 100 X 365 X 0.8				2,190,000
DRUGS	$12000 X 100 X 1.4				1,680,000
					14,674,000
OPERATIONS FEE	$10000 X 2 theatre X 670 cases				13,400,000
OUT-PATIENTS	$100 X 8 hours X 6 X 52 weeks X 6 day				2,496,000
BODY CHECKS	$1500 X 300 cases				450,000
OTHER REVENUE					
	RENTAL : FLORIST, NEWSTAND				120,000
TOTAL REVENUE					31,140,000
EXPENDITURE:					
SALARIES:		NO.	MONTHLY SALARIES		
	MEDICAL: DOCTORS	6	50,000.00		3,900,000
	NURSES	100	12,500.00		16,250,000
	PARA-MEDICAL	13	10,000.00		1,690,000
	ADMINISTRATION	48	-		3,607,500
EMOLUMENT					25,447,500
OTHER EXPENDITURE					8,482,500
TOTAL EXPENDITURE					33,930,000
NET PROFIT/LOSS					(2,790,000)

Appendix 20 (Con't)

SCENARIO2: OPERATION FEE IS ASSUMED TO BE AVERAGE $15,000 PER CASE

MODEL HOSPITAL
WITH 100 BEDS

REVENUE:

BEDS	class	no.	price	total	
	1st class	8	1800	14,400	
	2nd class	14	500	7,000	
	3rd class	78	200	15,600	
		100		37,000	10,804,000
MEALS	$30 X 2.5 X 100 X 365 X 0.8				2,190,000
DRUGS	$12000 X 100 X 1.4				1,680,000
					14,674,000
OPERATIONS FEE	$15000 X 2 theatre X 670 cases				20,100,000
OUT-PATIENTS	$100 X 8 hours X 6 X 52 weeks X 6 day				2,496,000
BODY CHECKS	$1500 X 300 cases				450,000
OTHER REVENUE					
	RENTAL : FLORIST, NEWSSTAND				120,000
TOTAL REVENUE					37,840,000

EXPENDITURE:

SALARIES:		NO.	MONTHLY SALARIES	
	MEDICAL: DOCTORS	6	50,000.00	3,900,000
	NURSES	100	12,500.00	16,250,000
	PARA-MEDICAL	13	10,000.00	1,690,000
	ADMINISTRATION	48	-	3,607,500
EMOLUMENT				25,447,500
OTHER EXPENDITURE				8,482,500
TOTAL EXPENDITURE				33,930,000
NET PROFIT/LOSS				3,910,000

SCENARIO 3: OPERATION FEE IS ASSUMED TO BE AVERAGE $20,000 PER CASE

MODEL HOSPITAL
WITH 100 BEDS

REVENUE:

BEDS	class	no.	price	total	
	1st class	8	1800	14,400	
	2nd class	14	500	7,000	
	3rd class	78	200	15,600	
		100		37,000	10,804,000
MEALS	$30 X 2.5 X 100 X 365 X 0.8				2,190,000
DRUGS	$12000 X 100 X 1.4				1,680,000
					14,674,000
OPERATIONS FEE	$20000 X 2 theatre X 670 cases				26,800,000
OUT-PATIENTS	$100 X 8 hours X 6 X 52 weeks X 6 day				2,496,000
BODY CHECKS	$1500 X 300 cases				450,000
OTHER REVENUE					
	RENTAL : FLORIST, NEWSSTAND				120,000
TOTAL REVENUE					44,540,000

EXPENDITURE:

SALARIES:		NO.	MONTHLY SALARIES	
	MEDICAL: DOCTORS	6	50,000.00	3,900,000
	NURSES	100	12,500.00	16,250,000
	PARA-MEDICAL	13	10,000.00	1,690,000
	ADMINISTRATION	48	-	3,607,500
EMOLUMENT				25,447,500
OTHER EXPENDITURE				8,482,500
TOTAL EXPENDITURE				33,930,000
NET PROFIT/LOSS				10,610,000

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